



# STORMWATER: A Challenging Resource

*Recommendations for an Integrated Regional Management Approach*

*Prepared for:*



WATER EDUCATION  
FOUNDATION

*Submitted by:*

**2013 Water Leaders Class**

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## EXECUTIVE SUMMARY

Contaminants in stormwater runoff can contribute substantially to the impairment of downstream water bodies. Current federal, state, and local regulations treat stormwater as a pollutant with strict management requirements and are not entirely effective in addressing the underlying environmental, flood control, and water supply goals for stormwater. With stormwater's complex challenges and the potential for exciting opportunities, the Water Education Foundation selected "Stormwater as a Resource" as the topic for the William R. Gianelli Water Leaders Class of 2013 (Class).

The Class brought together 21 young professionals from a mix of private, public and non-profit sectors in the water and natural resource management fields to research stormwater and interview industry experts on the challenges and potential opportunities in stormwater management. The following report details the Class effort to summarize current regulations, highlight critical challenges, and provide strategic recommendations leading to proposed draft legislation that aims to shift the paradigm of stormwater management in the State of California.



The 2013 Water Leaders Class found that the key challenges facing stormwater management generally fell into the following categories:

- Insufficient funding;
- Lack of integration between agencies;
- Difficulty in implementation of regulations;
- Ineffective regulations; and
- Limitations in localized monitoring.

Through interviews with Mentors and additional research, the Class came to the conclusion that watershed level management of stormwater with general permits supporting source control, interagency collaboration and educational campaigns, would provide the most effective basis to achieve meaningful changes to improve the health of our watersheds. The Class used these findings to draft legislation (a proposed Assembly Bill) that would help local communities and governmental agencies fund stormwater programs and overcome institutional and regulatory challenges.

The proposed bill supports a watershed-based approach to stormwater planning and management through financial incentives, administered by the State Water Resources Control Board (SWRCB), for voluntarily forming Watershed Management Authorities to plan integrated approaches to stormwater management. This proposed bill also encourages communities to apply for regional water quality permits and directs the SWRCB to support regional permits. Our hope is that the proposed bill will incentivize innovative solutions centered on the watershed scale that foster relationships between stakeholders and helps make the case for communities to invest in stormwater management. It is our vision that this approach will ultimately lead to an increase in new examples of stormwater capture and reuse, low impact development, source control, and public outreach and education that can be duplicated in other areas of the country.

## INTRODUCTION

Stormwater generally is regarded as waste, a consequence of growth and urban development. It is a byproduct to be dealt with, corralled, and controlled. However, stormwater holds a secret promise. What if stormwater was regarded as a resource? While it may carry trash and pollutants, it also holds the potential to recharge depleted groundwater basins, nourish watersheds and replenish drinking water supplies.

The following report gathers the cumulative knowledge, ideas and inspiration of the William R. Gianelli Water Leaders Class of 2013. The 2013 Water Leaders Class, an eclectic group representing public, private and nonprofit sectors, were individually paired with established stormwater professionals who acted as Mentors, sharing their knowledge and experience by educating the Water Leaders Class. Mentors included representatives from federal and state regulatory agencies, local governments, legal firms, and non-profits. Table 1 introduces each member of the 2013 Water Leaders Class and their assigned Mentor.

Each of the Mentors contributed a unique perspective to the group's understanding of the challenges and opportunities facing stormwater management. The Mentors helped the Water Leaders Class understand the intricacies of National Pollutant Discharge Elimination System (NPDES) permits, Municipal Separate Storm Sewer Systems (MS4s), and Low Impact Development (LID). In an effort to gauge and summarize perspectives across such a diverse group, each Water Leader interviewed their Mentor using a list of questions developed by the class. Question language and a summary of consolidated Mentor responses can be found in Appendix A. From this process a few key observations emerged, agreed on by both the Water Leaders and Mentors, regarding how stormwater is currently managed:

- Despite the comprehensive regulatory atmosphere, current stormwater controls are missing the point, and compliance enforcement is extensive, expensive and lengthy.
- The current regulatory framework falls short of generating effective water quality protection. This is evidenced by the number of Clean Water Act 303(d) listings that are attributed to urban runoff.
- True effectiveness of regulations and compliance should be measured in downstream habitats and receiving waters. That is, focusing on local numerical benchmarks of pollutant loads is less significant than examining the overall health of each watershed.
- When stormwater is viewed and managed from a watershed level, it can be reconsidered as a potential resource for groundwater recharge, sustainable ecosystems, human recreation and water supply.

These observations set the course for how the 2013 Water Leaders Class evaluated the current state of stormwater, the challenges it faces, and the recommendations for moving forward. As you read this report, the 2013 Water Leaders Class invite you to rethink stormwater as a valuable resource for today's responsible water management.

**Table 1. 2013 Water Leaders Class and Stormwater Mentors**

<b>Water Leader</b>	<b>Mentor</b>
<b>Jarvis Caldwell</b> , Aquatic Science Manager, Hydroelectric Services <i>HDR Engineering, Inc.</i>	<b>Eric Berntsen</b> , Environmental Scientist, Industrial/Construction <i>State Water Resources Control Board</i>
<b>Shaun Horne</b> , Watershed & Flood Control Resource Specialist <i>Napa County Flood Control District</i>	<b>Tom Mumley</b> , Assistant Executive Officer <i>San Francisco Regional Water Quality Control Board</i>
<b>Holly Jorgensen</b> , Acting Executive Director <i>Sacramento River Watershed Program</i>	<b>Pamela Creedon</b> , Executive Officer <i>Central Valley Regional Water Quality Control Board</i>
<b>Amy Kwong</b> , Senior Engineer <i>West Yost Associates</i>	<b>Noah Garrison</b> , Project Attorney – Water Program <i>Natural Resources Defense Council</i>
<b>Dustin La Vallee</b> , Associate Civil Engineer <i>Sacramento Municipal Utility District</i>	<b>Elizabeth Lee</b> , Senior Engineer and Municipal Stormwater Unit Supervisor <i>Central Valley Regional Water Quality Control Board</i>
<b>Sandra Lynch</b> , Water Quality and Environmental Compliance Specialist <i>California American Water</i>	<b>Carmel Brown</b> , Executive Advisor <i>Department of Water Resources</i>
<b>Shane McCoin</b> , Associate Attorney <i>Ellison, Schneider &amp; Harris</i>	<b>Kelye McKinney</b> , Engineering Manager <i>City of Roseville</i>
<b>Linda Esteli-Mendez</b> , Research Analyst <i>Environmental Defense Fund</i>	<b>Eugene Bromley</b> , Stormwater Coordinator <i>U.S. Environmental Protection Agency Region IX</i>
<b>Brandon Minto</b> , Deputy District Director <i>Congressman John Garamendi (CA-03)</i>	<b>Felicia Marcus</b> , Board Chair <i>California State Water Resources Control Board</i>
<b>David Mooney</b> , Program Engineer <i>Bureau of Reclamation</i>	<b>Katherine Wagner</b> , Senior Partner <i>Downey Brand, LLP</i>
<b>Derek Nguyen</b> , Water Quality Engineer <i>Yorba Linda Water District</i>	<b>Richard Boon</b> , Chief – OC Stormwater Program <i>County of Orange</i>
<b>Ashley Orsaba-Finders</b> , Senior Civil Engineer <i>Parsons Brinckerhoff</i>	<b>Rich Atwater</b> , Executive Director <i>Southern California Water Committee</i>
<b>Audrey Patterson</b> , Associate Attorney <i>O'Laughlin &amp; Paris LLP</i>	<b>Jonathan Bishop</b> , Chief Deputy Director <i>State Water Resources Control Board</i>
<b>Caitrin Phillips Chappelle</b> , Policy Associate <i>Public Policy Institute of California (PPIC)</i>	<b>Alexis Strauss</b> , Water Division Director <i>U.S. Environmental Protection Agency, Region IX</i>
<b>Howard Quan</b> , Legislative Consultant <i>Office of Assemblymember Paul Fong</i>	<b>Dave Tamayo</b> , Environmental Specialist 4 <i>County of Sacramento</i>
<b>Laura Rocha</b> , Managing Associate <i>Environmental Science Associates</i>	<b>Garry Brown</b> , Chief Executive Officer <i>Orange County Coastkeeper</i>
<b>Brinda Sarathy</b> , Professor <i>Pitzer College</i>	<b>Mark Grey</b> , Director of Environmental Affairs <i>Building Industry Association of Southern California, Inc</i>
<b>Andrew Schwarz</b> , Senior Engineer, Strategic Water Planning Branch <i>California Department of Water Resources</i>	<b>Victoria Whitney</b> , Deputy Director for Water Rights <i>State Water Resources Control Board</i>
<b>Jessi Snyder</b> , Senior Community Development Specialist <i>Self-Help Enterprises</i>	<b>Tess Dunham</b> , Attorney <i>Somach Simmons &amp; Dunn</i>
<b>Eric Tsai</b> , Water Resources Engineer, CV Flood Planning Office <i>California Department of Water Resources</i>	<b>Terri Fashing</b> , Stormwater Program Manager <i>County of Marin</i>
<b>Kristin White</b> , Modeler <i>Bureau of Reclamation</i>	<b>Greg Gearheart</b> , Senior WRCE, Industrial/Construction Unit <i>State Water Resources Control Board</i>

## BACKGROUND

### What is Stormwater?

Historically, stormwater in the United States has been treated as something to be collected, conveyed, and discharged away as nuisance water. Stormwater picks up municipal, industrial, and commercial pollutants such as bacteria, pesticides, heavy metals, oils, and sediment. All of these pollutants have contributed serious harm to environmental health and public health and safety. As such, stormwater pollution is a major cause of the degradation of wetlands, rivers, estuaries, and the ocean.

Before widespread environmental awareness and regulation, stormwater and its associated conveyance facilities were commonly thought of as dumping grounds for waste and other by-products. The advent of the environmental movement caused the general public and governments to notice the impacts of polluted stormwater on the environment, which brought about groundbreaking regulation under the federal Clean Water Act.

In the 1990s, the USEPA began focusing on the second generation of problems targeted under the Clean Water Act – polluted runoff that impairs water quality for human and ecological uses. (The first generation of Clean Water Act efforts concentrated on wastewater treatment and reducing other “point” sources of pollution such as industrial discharges.) Initially only the largest urban areas (populations above 100,000) were required to obtain pollution management permits for urban stormwater. However, since the 2000s, smaller municipalities and counties (populations above 50,000) have also come under the law, which now requires separate permitting requirements for some high-impact sectors and activities (*e.g.*, general construction and Caltrans for highways). Up until now, the main focus of stormwater was on improving water quality and mitigating hydromodification impacts. However, with the increasing demand for water supply in California, attitudes have changed, and stormwater is now beginning to be looked upon as a potential resource, especially in water-scarce Southern California.

In recent years, many innovative land use practices and Low Impact Development strategies such as rain gardens, green roofs, water catchment systems and a variety of treatment approaches have been developed to improve the quality of stormwater and increase infiltration. There have also been advances in source control through the regulation of pollutants of concern and advances in green chemistry. There is also recognition that current regulations and institutions have limitations and may need to be expanded to comprehensively manage stormwater pollution.

#### Definition of Stormwater

The United States Environmental Protection Agency (USEPA) defines stormwater as “runoff that occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent stormwater runoff from naturally soaking into the ground.” For the purposes of this report, we use the same definition, but expand it to include runoff from urban water use as a source of stormwater beyond rain and precipitation (for example from landscape overwatering or other outdoor water use).

## State of Stormwater

The National Research Council (NRC) developed a report in 2009, *Urban Stormwater Management in the United States*, that reviewed the current state of urban stormwater management in the United States. The goal of that report was to determine how pollutants affect stormwater, evaluate the effectiveness of monitoring and current permit requirements and make recommendations to improve the current permitting process. The report examined the challenges that result from conflicts among stormwater management and flood control, the self-reporting regulatory approach, an ineffective monitoring/enforcement program, minimal regulation of heavily contributing products and inadequate federal funding. Together these challenges result in a nationwide stormwater management approach that is not effective in achieving water quality goals in the impaired water bodies in the United States. The NRC developed many improvements to address these challenges, but the key general recommendation was to move away from individual site permitting to a watershed-based permitting process. This would require stormwater discharge regulation on a watershed-wide level with goals to improve or stop degradation of the water bodies within the regional watershed.

Within California, due to the vast geographical, population, and climate variation statewide, there have historically been different views towards stormwater. The less-populous northern half of the state typically receives much more rainfall than the southern half and tends to be more focused on viewing stormwater as a flood threat rather than a resource. The densely populated Southern California has historically been water scarce and supplements limited local supplies with water imported from the Sacramento River, Colorado River, and other remote sources. With such limited local supply, the idea that stormwater can be used as a source of supplemental supply has gained ground and is being implemented in many areas. Generally, areas with supply or pollution concerns have been more progressive in implementing innovative or new approaches for stormwater reuse, regulation, and collaboration.

## Current Regulations

### Federal Regulations

The federal Clean Water Act and National Pollution Discharge Elimination System (NPDES) were originally implemented by the USEPA to focus on point sources of industrial pollution. Stormwater and the pollutants it carries gained attention in the 1970s. However, at that time only point source discharges such as wastewater treatment plants were regulated. In 1987, Congress included industrial



and municipal stormwater as point source discharges in the Clean Water Act and required these entities to obtain NPDES discharge permits. USEPA also allowed for individual states to implement its own stormwater program, which the State of California does within the authority of the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Board's branches of the State of California Environmental Protection Agency (CALEPA).

Under the regulation of the NPDES, USEPA split the regulation into two phases - Phase I and Phase II. The Phase I regulation required construction sites (five acres or more), industrial

dischargers, and municipalities (MS4s) of more than 100,000 people to obtain permits by 1991 for stormwater discharge. In 2003, Phase II rules were implemented that required all municipalities, industrial dischargers, construction sites (one acre or more), and other large organizations to obtain NPDES permits for stormwater discharge.

### State Regulations

Under its authority to implement and regulate NPDES rules, CALEPA implemented the following four separate permitting programs:

- Caltrans Permit: The SWRCB issued a discharge permit to Caltrans in 1999 which regulated all discharges from the agency's MS4s, maintenance facilities, and construction activities. The permit was reissued by the SWRCB in 2012.
- Construction General Permit: The SWRCB requires all construction sites in excess of one acre to obtain coverage and comply with the Statewide General Permit for Discharges of Storm Water Associated with Construction Activity.
- Industrial Permit: The SWRCB requires all industrial stormwater dischargers to obtain permits for stormwater discharge under the Industrial Storm Water General Permit.
- Municipal Permit: The SWRCB regulates stormwater discharges from municipalities and co-permittee municipalities through MS4 permits. All Phase II permittees were required to comply with the most recent Phase II Small MS4 General Permit by July 1, 2013.

Since 1949, there have been several laws, general obligation bonds, and constitutional reforms passed at the state level, which have impacted the way stormwater is managed and funded in California. These are discussed briefly below.

### Legislation:

- Dickey Water Pollution Act of 1949: Created the State Water Pollution Control Board and nine Regional Boards to oversee and enforce the State's pollution prevention and abatement program.
- Porter-Cologne Water Quality Control Act of 1969: Considered the cornerstone of modern clean water legislation. The Act gave the SWRCB and the Regional Boards a stronger framework for regulation of water pollution.
- Assembly Bill (AB) 739: Created a Storm Water Advisory Task Force to provide advice to the SWRCB on its Storm Water Management Program including program priorities, funding criteria, project selection for Proposition (Prop) 84 monies, and interagency coordination of State agencies and programs that handle stormwater management.
- Senate Bill (SB) 790: The Stormwater Resources Planning Act created a new framework for municipalities to put stormwater to beneficial use and mitigate impacts. The bill encouraged municipalities to manage stormwater as a source for water supply, with attention to flood prevention, stormwater pollution mitigation, and wildlife restoration.



### *State General Obligation (GO) Bonds:*

- *Prop 84*: Under the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006, the Stormwater Grant Program provides approximately \$50 million in grant funding for the SWRCB to assist local public agencies with grants for stormwater projects that reduce pollution.
- *Prop 50*: Under the 2002 Water Security Bond, approximately \$3.44 billion was provided for water programs. Remaining funds were allocated to stormwater projects under SB 790.
- *Prop 40*: The Urban Storm Water Grant Program provided grant funds to be used to assist agencies with planning and implementation of stormwater projects.

### *Constitutional Reforms:*

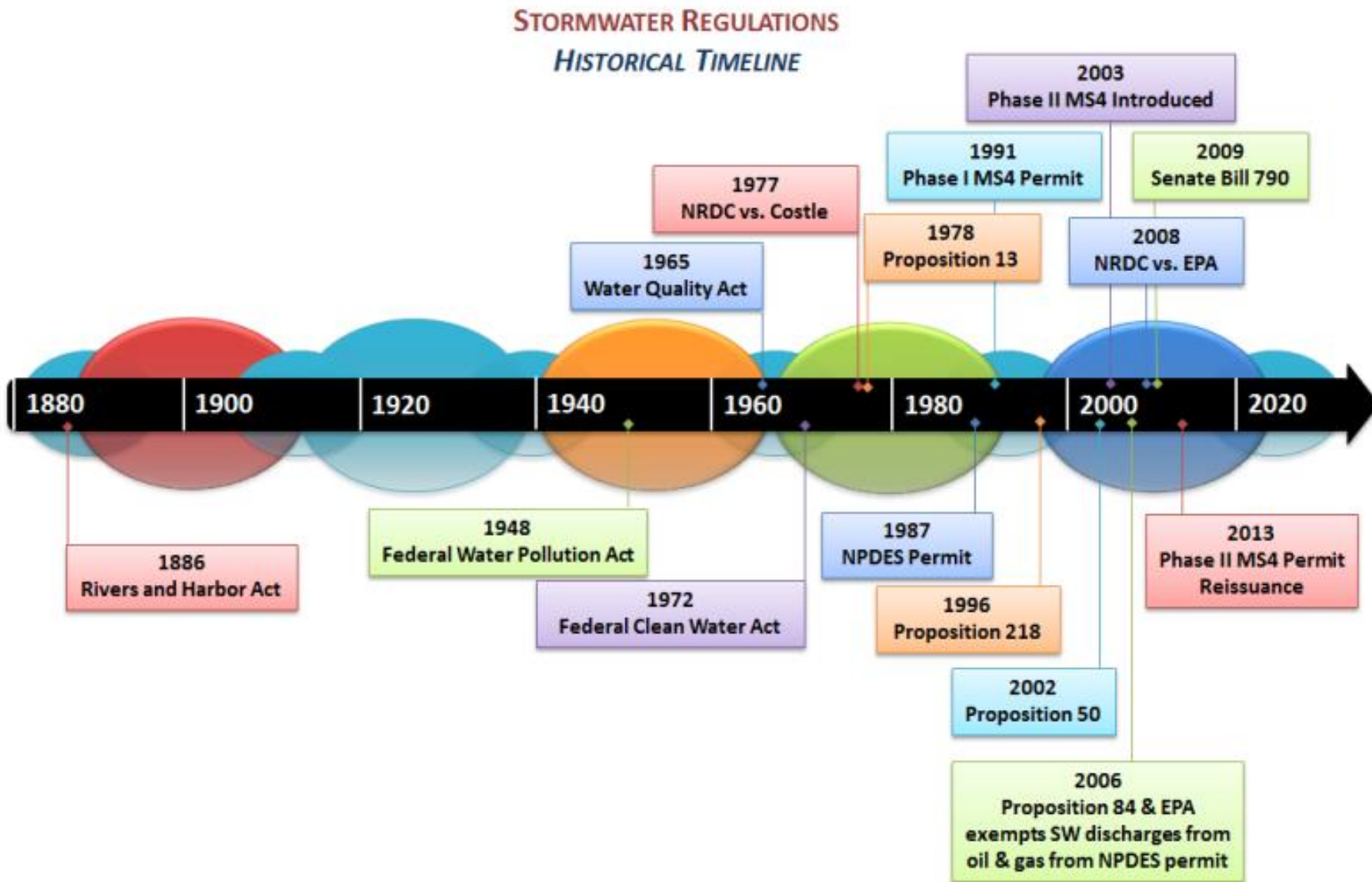
- *Prop 13*: Passed in 1978, among other items, the proposition requires a two-thirds majority vote in local elections for local entities that wish to increase special taxes. This proposition and its sister bills have contributed to the issue of under-funding for stormwater programs statewide.
- *Prop 218*: Passed in 1996, the proposition requires local governments to put new or increased assessments to a majority vote of property owners before it can be levied. Similar to Prop 13, this proposition also contributes to the issue of under-funding for stormwater programs statewide due to the reluctance of voters to increase taxes or assessment upon themselves.

A historical timeline of significant federal and state stormwater regulations and funding reforms is shown on Figure 1.

### Local Regulations

Most local municipalities or other governments have implemented stormwater control regulations as part of their MS4 permits. The MS4 permit requirements have led to the implementation of Low Impact Development (LID) site development requirements, public outreach and education campaigns, stormwater organizations, and a variety of other individualized rules and guidance that municipalities have developed for their unique circumstances. An example of one such local program is the City of Roseville's Eco-Friendly Charity Car Wash Program, which provides storm drain protection car wash kits to charities free of charge.

Figure 1. Historical timeline summarizing major stormwater regulations and funding reforms



## CHALLENGES FACING STORMWATER MANAGEMENT

The management and regulation of stormwater in the United States is faced with many challenges that make improvement or reform a difficult task. The challenges that face stormwater management today are typically related to funding, public awareness, institutional organization, regulation implementation, and monitoring.

### Funding Challenges

Currently, there are not enough funding sources for stormwater management despite the increasing regulation and requirements that municipalities must comply with. Municipalities are faced with competing for sources from the general funds than ever before, a situation that has been made worse by the slow economic reality of the past several years. This funding gap stretches municipalities' budgets, leading to prioritization away from stormwater management to other critical services.

Statewide bond measures have successfully passed and provided funding for stormwater projects. However, the need for stormwater funding sources is much greater in scope and cost than these bond packages are able to provide. Attempts to increase funding for stormwater improvements are often unsuccessful as local jurisdictions must approve new taxes or fees via a majority vote, and many voters are unwilling to increase the taxes or fees that they pay, especially in depressed economic conditions. By asking residents and communities to pay for a non-tangible benefit for a perceived naturally occurring process is a tough task. While the general public recognizes that systems must be in place to provide tap water or to have sewage water removed, the systems required for effective stormwater management are less obvious.

Although many states have statewide general permits, direct stormwater management is often handled at the local level by limiting individual dischargers and treating for particular contaminants. These local communities are responsible for meeting the federal or State issued mandates, but receive no federal or State funding to carry out their implementation. This often results in a smaller community paying a proportionally higher cost to treat issues that originate elsewhere in the watershed. This problem is compounded by lack of federal and State financial support for stormwater management in these local communities.

Available funding for stormwater comes in many different forms, which all have their own advantages and disadvantages, but together still do not meet the budget necessary to implement effective stormwater management. Currently, the funding for stormwater management comes from pulling funds from a variety of federal, State, regional, and local sources, with the mix of funding varying by municipality.

### Federal and State Funding Sources

- **Federal and State Grants:** Federal and state grants are available for stormwater management, but often require fund matching from local communities. This matching requires contribution from the local population. In addition to the fund matching, not all costs of a project are eligible for reimbursement, which can result in a higher local cost. The application process for grants includes an inherent risk, because it is often time-consuming

with no guarantee of success. Current opportunities within California are Prop 84 funds (State) and CWA Section 319 Nonpoint Source Grants (federal).

- **State GO Bonds:** Bonds can raise funds for infrastructure development, but their use is either very competitive or requires significant work on behalf of the local community.
- **State Revolving Fund:** State revolving funds (*i.e.*, loans) could be used to fund large capital projects, but are not for the daily management of stormwater. Historically, there have been little State revolving funds for stormwater, but it is a funding mechanism that is now being investigated. Since State revolving funds don't require large annual infusions of money, they are promising for future projects.

### Regional and Local Funding Sources

- **General Funds:** When a dedicated stormwater funding mechanism is not in place, stormwater management is relegated to using general funds. General funds can vary drastically from year to year in step with the local economy. These same general funds also provide funding for public safety and emergency services, creating enormous competition for the limited funds. Although stormwater management has a very real impact in the community, prioritizing this impact over that of public safety is a major challenge that often results in little to no funding. Many municipalities use general funds as their sole funding mechanism for stormwater.
- **Development Fees:** Municipalities can pay for stormwater controls through the Specific Plan process which allows community facility districts to be formed and funded for new development; however, this is often not enough to cover on-going management of stormwater programs. Few stormwater districts exist in California; more common are wastewater and flood control districts. A stormwater fee for new development only covers the cost of stormwater management attributed to the new development and would not fund work to improve the quality of runoff from existing development. In communities that are no longer growing, this method cannot be used to pay for increased regulations.
- **Property Taxes:** Property taxes have been strongly used in the past to fund stormwater management as much of the pollution comes from runoff from property. Some funding could be generated from higher property taxes; however, changes to property taxes are paired with many challenges due to Propositions 13 and 218 as explained in the following section.
- **Stormwater Utility and/or Drainage Fees:** Presently, one of the most common funding mechanisms is a stormwater fee levied onto homeowners by cities. A stormwater utility fee is the typical funding mechanism that is being used by municipalities in the Central Valley region to pay for stormwater management, infrastructure, and operations and maintenance costs. If structured correctly, utility fees can provide a stable, reliable revenue source that is sufficient to cover costs. Like property taxes, however, there are limitations due to Propositions 13 and 218 as explained in the following section.
- **Special District Fund:** Special Districts can charge permit fees to discharge stormwater into a municipal sewer system. This requires individual property owners to have a permit to cover

stormwater discharge. An available tool that is not widely used is SB 310 which authorizes a permittee or co-permittee under an NPDES permit for a municipal separate storm sewer system (MS4) to charge a fee to develop a watershed improvement plan (WIP) to address stormwater issues.

Extended producer responsibility (*i.e.*, making the waste producers pay for final disposal and clean-up of their waste product) is another mechanism to generate funds that do not require new fees or taxes for residents. These would only apply to the manufacturer of a specific product whose use is directly impairing the water quality of a water body such as fertilizer or cigarettes. Added fees would fund programs to help remove these contaminants from the local water ways. Extended producer responsibility ensures that the manufacturer of the product is responsible for its final disposal in an appropriate manner. An example of this would be used tire collection facilities that are funded by the tire manufacturers. However, this funding mechanism is a challenge because it requires a large commitment or cost from targeted manufacturers to provide a service that hasn't been paid for in the past. This effort would need to be led by someone who was confident that the manufacturer's product was largely responsible for particular contaminants and by someone who is not fearful of losing financial support in future elections.

### [Implications of Propositions 13 and 218](#)

The above local funding mechanisms are all challenging to implement due to the passage of Propositions 13 and 218 by California voters. Prop 13 constrains local governments' ability to raise property taxes and specifies that any local tax imposed to pay for specific governmental programs must be approved by two-thirds of the voters. Since the passage of Prop 13, many local governments have relied increasingly upon other revenue tools to finance local services, most notably: assessments, property-related fees, and a variety of small general purpose taxes (such as hotel, business license, and utility user taxes).

Prop 218 was passed by California voters in November 1996 to ensure that all property taxes and fees are subject to voter approval in order to prevent property-related funds being used for services that are not property related. Prop 218 established requirements for a two-thirds majority approval vote for use of these other funds. The only way to change Prop 218 would be to modify or repeal it by an amendment to the California Constitution.

Prop 218 requires ballots to be mailed to each property owner, a public hearing be held and votes to be 'weighted' proportional to the relative fee-payment (*e.g.*, if the fee amount is based on the size of the property, then the vote of an owner of a property twice as large gets twice the vote). This process alone prevents legislators and community leaders from trying to increase funding for stormwater management and reform the current regulatory process. A significant advertising campaign is also necessary to educate and attempt to persuade a super-majority to voluntarily increase their taxes. Obtaining a majority of votes is a challenge due to low voter participation, and when voters do participate, the fees must be proportionate to the cost of providing service. Few Prop 218 taxes have passed while the cost to attempt them has been huge. Other utility fees including water, sewer, and solid waste fees are exempted from the voter requirement which makes stormwater an isolated utility that faces this challenge.

Further complicating this challenge is that urban runoff is a property-related issue; however, the State MS4 NPDES Permit covers any pollutant with a connection to urbanization including trash, mercury exposure reduction program (MERP), etc. This makes property owners in a specific community less inclined to pay an additional tax or fee for a service that benefits all residences within the watershed.

Post Prop-218, some municipalities have been successful in getting voter approval of stormwater fees, but only where there are compelling reasons for the community to support the stormwater controls. For example, beach communities have better reasons to promote stormwater regulations and have voter support to pay for it because they can suffer beach closures from water quality pollution, which in turn affects their tourism-based economy. While this is promising for water-tourism based communities, most of the communities within California do not have this benefit and therefore, lack the motivation to impose additional taxes upon themselves.

### Institutional Challenges

Institutional challenges in stormwater management originate from ineffective organization of the agencies that manage or regulate stormwater quality and quantity. Many of these problems originate because stormwater is a combination of both flood control and water supply which are almost always controlled by different agencies with different missions.

Agencies which manage water supply and flood control have different goals, some of which may conflict with each other. This conflict between agency goals can result in a lack of trust between agencies that resonates into the communities they oversee. An example of this is the struggle between flood control and improving stormwater quality. The objective of flood control is to move stormwater out of an area as quickly as possible to avoid deep or standing water which can devastate property and threaten lives. Unfortunately the fast moving water also picks up a plethora of pollutants from chemicals on the ground to debris in neighborhoods. In order to limit the collection of these pollutants and debris, water must be slowed down and given time to infiltrate into the ground, a direct contradiction to the goals of flood control. The conflict is seen throughout communities when building codes require a large stormwater outfall pipe to prevent flooding, but other organizations are pushing for rain gardens and green roofs to minimize runoff. When this conflict is added on top of a society that already has a general distrust of



government and government spending, reform of the organizational structure becomes a very challenging task.

Even across the same issue of stormwater quality, the organizations whose mission is to improve a particular water body have trouble with the lack of enforcement of self-mandated regulations and the accuracy of self-reporting. This often creates distrust between non-government organizations that support efficient stormwater management and the governmental agencies that are responsible for stormwater management.

The pollutants in stormwater vary across many different industries which results in conflict in managing pollutants and the original product manufacturers. Pesticides, copper, gasoline, cigarettes and plastic bags all contribute heavily to impaired water quality in many water bodies, but their regulation occurs in various agencies whose programs are not integrated under the context of stormwater and pollution management. Even within each agency there can be a lack of integration for unified goals of effective stormwater management.

This lack of integration also applies to the communities themselves. Although primary responsibility for carrying out stormwater regulations lies with the community, industries and highways that are regulated separately lie within the community and operate under different permits with different requirements.

One key item that prevents integration among all agencies and departments is a failure to view stormwater as a resource, but rather as a nuisance that must be removed quickly. Efforts to keep stormwater as clean as possible and capture it for water supply would require integration and cooperation among all water and contaminant related management and regulatory agencies. This would require a substantial reform of the current stormwater management system.

Policies which aim to regulate stormwater must be clear and easy to implement and regulate or they can become both regulatory and financial burden to smaller downstream permittees. In addition, most policies are regulated by political boundaries rather than watershed boundaries. This leads to different regulations within the same watershed and sometimes even for the same property.

### **Implementation and Regulatory Challenges**

Stormwater management has developed as a regulatory process in the last few decades even though heavy urban development has been occurring for over a century. This late-coming has resulted in newer developments being responsible for the damage done by older developments which did not consider stormwater management in its original design.

The current regulatory methods for ensuring appropriate stormwater management need to be implemented and monitored in order to be effective. Often, the local agencies are responsible for enforcing the requirements in the regulations but are not financially supported by the agencies that issued the regulations (*i.e.*, unfunded mandates). This often results in insufficient staff and equipment to carry out the rigid regulations and is even worse for smaller communities. If regulations are not enforced and are left to self-reporting, local communities have a difficult time determining the effectiveness of particular management methods, sometimes leaving them unable to comply without the proper tools.

Due to this implementation challenge, source control becomes a major challenge since the regulating communities do not have adequate funding and staff to determine where the problems exist. In some cases, a key cause of the impaired water body is a material that cannot be regulated at the local level. For example, chemicals from classes of pesticides may be listed on CWA 303(d) lists and then regulated by total maximum daily loads (TMDLs), with municipalities as the responsible party to meet and/or monitor for the TMDL requirements for those chemicals; however, municipalities have no way to regulate the upstream use of pesticides. In other words, they become responsible for dealing with contamination that originates far afield.

## Monitoring Challenges

When the regulations vary within a watershed and even between river miles, monitoring to view the watershed as a whole becomes very challenging. An effective monitoring plan for a watershed would require a big-picture plan that is not affected by the particular permit applications or jurisdictions. Due to the self-regulating methodology of the NPDES program, the monitoring locations and methodologies are not coordinated within the watershed to measure the effectiveness of the program as a whole, but rather at individual sites to measure only the individual property. This individual focus leads to processes which produce immediate measurable outcomes rather than large-scale, but less direct improvements (such as best management practices), which may take time and more wide-spread implementation before the benefits are realized.

## GENERAL RECOMMENDATIONS

The Mentors for the 2013 Water Leaders Class identified a number of inadequacies in the current regime of stormwater management (see section on Challenges Facing Stormwater Management), and offered constructive recommendations for further improving water quality. Overall, experts in the stormwater field agreed that:

- Stormwater management should be managed at the watershed scale rather than determined through geopolitical boundaries;
- There needs to be more effective communication and collaboration among stakeholders, regulators, and stormwater managers;
- Continued public outreach and education is a necessary and effective way to increase awareness about the importance of stormwater management;
- There needs to be a shift in focus to reducing sources of pollution.

A more detailed overview of Mentor recommendations can be found in Appendix A. Highlighted below are recommendations related to source control of pollution and to improving stormwater regulation at the different levels of governance.

### Source Control

Mentors consistently stressed the need for the SWRCB to prioritize *source control* of specific pollutants in order to attain water quality endpoints, rather than relying primarily on broad guidelines and end of pipe treatment approaches. Source reduction is when the pollutant never gets into the environment through methods such as banning a product or reformulating products (green chemistry). Examples include disallowing plastic bags in stores and banning certain pesticides for residential use. Experts suggested that legislative efforts to reduce sources of pollution, such as removing copper from automobile brake pads, are critical to improving water quality. Since much of the copper in stormwater runoff is in a dissolved form, the





type of treatment technologies that are most commonly retrofitted into storm drain systems – drain inserts that remove trash and other solids – are not effective in removing copper. SB 346, for example, requires that, in order to improve and protect the State's aquatic environment, the amount of copper in brake pads sold in California needs to be reduced to 0.5 percent copper by weight by 2025. The bill also creates limits and monitoring requirements for other brake pad materials.

Another source control approach mentioned by Mentors was the use of community based social marketing (CBSM), which applies sociology towards public education and may be exemplified by “Our Water Our World, ” a point of sale outreach campaign in stores that sell pesticides. The program provides information on less toxic alternatives to pesticides and targets consumers, but also partners with and trains the stores on less toxic alternatives. As a result of this campaign and staff training, some stores have stopped selling some pesticides. Some Mentors indicated that organizing around stricter local ordinances (*i.e.*, banning plastic bags) could be more effective than a statewide or nationwide regulation.

## **Improving Regulation**

### Federal Level

At the federal scale, many Mentors noted that the NPDES program is unable to address the vast amount of non-point stormwater runoff, and USEPA efforts to update regulations have proven inefficient. Mentors suggested that the USEPA focus on source reduction of contaminants by exercising more regulatory oversight of national licensing of products that contribute significantly to stormwater pollution. At the same time, some expert Mentors noted that these methods are narrow and targeted at specific problems and generally take a long time to develop (*e.g.*, the copper brake pad ban took around ten years to transpire). In addition, state and federal government need to be convinced to use existing regulatory authorities to benefit surface water quality. Finally, some Mentors suggested that the federal government should provide more financial support to state and local efforts to regulate stormwater. While this measure would probably be welcome by state and local institutions, the likelihood of any increase in USEPA funding is slim given the federal budget deficit and on-going political gridlock in Washington +DC.

### State and Local Levels

State and local agencies must also improve their communication and work with legislators to develop cohesive management approaches to achieve the goals of stormwater regulations. Performing cost-benefit analyses for new regulations, adding numeric limits to stormwater permits, and applying regulations to existing development could all improve effectiveness. Facility-specific numeric effluent limits based on characteristics of site or industry was also recommended as a potentially more realistic approach to developing numeric effluent limits on storm sewer systems due to data limitations.

At the municipal level, stormwater management is determined by geopolitical boundaries, which results in a “permit-compliance” mindset, rather than a more comprehensive watershed scale attitude of stewardship. Moreover, many municipalities have limited resources to address stormwater pollution and regulation primarily revolves around implementing low cost, no regret actions. The net result of this type of regulation does not add up to many measurable benefits and no regret actions are difficult to appraise because their very nature provides the obvious, can't-lose choices.

From the MS4 perspective, water quality standards represent a much-needed area of regulatory reform. Some Mentors noted that current water quality standards do not reflect the dynamic conditions found in stormwater discharges or the intermittent nature of the discharges. The problem is particularly acute for sanitary quality standards, where body contact recreation is not a practical beneficial use for safety reasons in highly modified creek systems during runoff events in most parts of the country.

In general, flood control, wastewater, solid waste, and drinking water are programs within a MS4 that could affect the stormwater program, yet they operate separately. MS4s should thus look at these programs and seek opportunities for coordination and collaboration in order to more holistically reduce run-off. Mentors repeatedly emphasized the need for future regulations to focus more on concrete solutions (reducing specific source pollutants) and less on general programmatic solutions. For instance, they suggested that municipalities identify what priority discharges are and address the most egregious discharges first. In other words, address problems on a more specific basis, rather than at a high-level general basis.

A number of Mentors also voiced concerns that while permit compliance has become more expensive and lengthy, it has not led to more effective water quality protection. They suggested that the effectiveness of stormwater management be assessed through the health of habitats downhill and that of receiving waters, instead of relying so heavily on benchmarks for numeric effluent limitations.

Finally, Mentors recommended various instruments and policies to improve water quality/regulate stormwater such as:

- **Taxes:** For example a water quality tax on trash, such as taxes on cigarettes and plastic manufacturers that would go towards trash collection.
- **More stringent trash policies:** Expanding on current policies to reduce the source of trash such as full trash collection at drain inlets, ordinances that encourage people to bring their own containers to stores and restaurants, plastic bag bans, and styrofoam bans. Another approach is intercepting the trash before it reaches waterways, which can be accomplished through different methods such as the Low Impact Development (LID) approach and trash Total Maximum Daily Loads (TMDLs) in Los Angeles.
- **Increased producer responsibility:** There is a need for greater source control of pesticides as those chemicals end up on CWA 303(d) listings (a list of impaired and threatened waters listed by USEPA), and then municipalities would have to meet those water quality requirements yet they have no way to stop the chemicals from entering the environment. The next front in source control is producer responsibility and changing product formulas to prevent pollutant generation.
- **Treatment:** Keeping stormwater on-site, treating and then reusing it. This would help create an additional source of water supply.
- **Education:** Education of the public can promote greater source control as well. One public campaign example is educating citizens that car wash runoff is highly polluted with contaminants, which are harmful to the ocean.
- **Technology advances:** Street sweepers, vacuum sweepers, centrifuges that spin sediment out, and electric vehicles (using fewer fluids than normal cars).

## Proposed Draft Legislation

Stormwater management today is largely a municipal function. Existing State law authorizes cities, counties and special districts to develop and implement stormwater resource plans. The nature of stormwater, however, leads us to conclude that it is perhaps best managed at the watershed level. Runoff, urban or otherwise, spreads across broad geographical areas, collecting and redistributing pollutants as it flows. Moving downstream, it carries contamination from distant areas to affect local flora, fauna and human recreation. Pollutants can, and do, easily traverse city and county boundaries via natural or manmade channels. A watershed-based approach to stormwater planning and management would encourage local agencies to look upstream and downstream when considering runoff, and would enhance each agency's ability to protect their waterways, creating a whole greater than the sum of its parts.

Echoing the integrated regional water management model already in place in California, the 2013 Water Leaders Class proposes that a program be created which encourages and incentivizes collaboration between local agencies. The agencies would voluntarily task themselves with reducing pollutant load within their common watershed by implementing programs, projects and controls which best fit their geographical region. The 2013 Water Leaders Class drafted a mock Assembly Bill that would provide for the creation of such integrated plans, consistent with other existing plans, and allowing for functional equivalents such as watershed management plans, urban water management plans, or other plans. The proposed bill is included as Appendix B of this report.

As proposed, the bill would amend certain sections of the California Water Code, and would add, "Stormwater Watershed Management Authority Act" to Division 6 of the California Water Code. The aim of the Act is principally to encourage watershed scale management while reframing stormwater as a resource, not as a waste product to be conveyed away from people and property. Properly managed, stormwater can contribute to local water supplies through on-site storage and reuse or through groundwater recharge, thereby increasing local available supplies of drinking water. As precipitation patterns change, and an increasing amount of California's water falls not as snow in the mountains, but as rain in other areas of the state, the value of stormwater is clear.

If stormwater is embraced as a resource, then proactive protection of its quality should naturally follow. Since water quality ignores jurisdictional boundaries, it also follows that greater results will be achieved through watershed-level planning. The proposed legislation provides flexibility to create new watershed level stormwater authorities that bring together different agencies and municipalities in an effort to better integrate, coordinate, and when possible consolidate. In addition, the proposed bill allows the SWRCB to support and encourage effective, watershed-based efforts to improve stormwater quality and retain it for beneficial, multi-purpose uses through several funding opportunities. The proposed bill requires the SWRCB to develop guidelines for awarding grants for watershed projects that enhance water quality, to prioritize the prevention of pollution (rather than addressing its symptoms), and to improve the stormwater discharge coordination and integration of monitoring efforts. The SWRCB is further empowered to reward watershed-based efforts by waiving or reducing discharge fees and to promote LID by funding pilot projects in disadvantaged communities and other locales. To address funding challenges a third grant program would provide funds for watershed authorities to develop their own local and sustainable funding source.

## What the Proposed Draft Legislation Does and Does Not Address

The proposed legislation would address many of the challenges identified in stormwater management. Primarily, the bill seeks to alleviate some of the funding challenges associated with stormwater management; a problem that has only been exacerbated under the current fiscal climate. By making grant funding available for the purpose of developing and implementing integrated watershed based stormwater management plans, as well as grant funding for the Authority to develop a local funding source to support stormwater programs, the bill attempts to reduce the current financial burden facing stormwater agencies. While the grants can provide help with the process of developing a funding source, which can include extensive expenses from research, polling, and public education the agencies will have to rely on taxes and fees, which are all still limited in scope by Propositions 13 and 218.

Moreover, the proposed bill's push to integrate stormwater management on a watershed scale serves to limit common institutional challenges, and ease local regulatory and monitoring challenges, all while improving regulation at the local and state level. The bill encourages cities, counties, special districts, or others to form Watershed Management Authorities and foster collaboration on a regional watershed approach to reduce the institutional challenges associated with siloed agencies focused on various independent missions. Regional management of stormwater presents multi-purpose opportunities for flood control, water supply, and recreation, as well as the protection, restoration and strong stewardship of aquatic resources in a regional area.

Many of the regulatory and monitoring challenges of stormwater management stem from the inefficiencies of local municipalities that lack the resources to adequately enforce or determine the effectiveness of particular management methods, in addition to the self-regulating methodology of the NPDES program, which deters coordinated monitoring locations and methodologies within a watershed. A watershed-based approach to stormwater management, as called for in the proposed bill, allows for the pooling of resources and provides for regional integration and prioritization of stormwater initiatives. This collaboration allows for coordinated planning, implementation and monitoring aimed at meeting regional water quality objectives, while broadly sharing the associated burden amongst the municipalities in the watershed.

Current stormwater regulation at the state and local level drive geopolitical boundaries that result in "permit-compliance" mindsets and limit the resource management potential inside of a watershed. Coupled with the existing regulatory environment, MS4 flood control, wastewater, solid waste, and drinking water programs all operate separately and yet could affect stormwater programs and management. By encouraging regional watershed integration in conjunction with the SWRCB, the proposed bill transforms regulation away from these geopolitical boundaries and provides incentive for a more efficient and effective regional collaborative approach.

While the proposed bill works to address many of the challenges associated with stormwater management, it is not without some limitations. Rather than relying on broad guidelines and end of pipe approaches, source control of specific pollutants is critical for attaining water quality endpoints and the proposed bill does not address source control. The most effective way to ensure a pollutant does not enter into the environment is to ban that product so it never has the opportunity. Although there have been legislative efforts to reduce things like plastic bags and copper in brakes, the proposed bill does not address specific pollutants.

Furthermore, while providing a foundation for more efficient and effective stormwater planning and management, the proposed bill does not address the many challenges that existing infrastructure, particularly in urbanized areas, pose to stormwater management. As awareness of stormwater has increased, including its value as a resource, so too have urban design methodologies to capitalize upon and manage this resource. New methodologies include greener approaches with less impervious surfaces that allow stormwater to percolate into the ground, recharge aquifers and reduce urban runoff. A significant challenge for many municipalities is the ability to address existing infrastructure that was not optimally designed for resource management.

The proposed bill would provide grant funding for watershed authorities to develop a local funding source to support stormwater programs and the implementation of projects. However, watershed authorities will still have to develop local funding sources, a sizable challenge for many parts of the state with stretched resources.

It is important to note that the proposed bill is a proposed state law for California and would only affect entities that are within the state; as well as the fact that the proposed bill is a voluntary program that encourages participation, but does not mandate it.

## LONG-TERM VISION

While the proposed legislative bill will not solve all of California’s complex stormwater issues, our hope is that it can be a catalyst for innovation and can help start to move California past its current state of ineffective stormwater management. This proposed legislation develops a voluntary program to address many of the challenges facing stormwater managers and will incentivize innovative solutions centered on the watershed scale that foster relationships between stakeholders.

This proposed legislation has been modeled on the Integrated Regional Water Management (IRWM) program model. The IRWM program started in 2002 and now 97 percent of California residents live



within an IRWM planning area. The IRWM program has been credited with bringing diverse interests together and building strong working relationships that have helped improve water management at the regional scale. It is anticipated that our proposed bill could have a similar impact on stormwater management—expanding the scale and scope of management approaches, building relationships, and incentivizing projects and programs that provide broad benefits across a watershed.

If implemented, the proposed bill will be California state law. The success of this legislation has the potential to instruct other states in developing successful, integrated regional stormwater watershed management programs, and provides a funding framework to promote program longevity and continued stakeholder participation. The benefits of this law are not just meant for the large municipalities; it will also benefit smaller entities that want

help with improving stormwater efforts, but do not currently have the resources. The focus of the

proposed bill is on integrating water resource planning and stormwater management to develop a comprehensive and sustainable water management framework that could be expanded upon to meet California's growing water demands for both humans and the environment.

As stated above, the proposed bill encourages regional watershed integration in conjunction with the SWRCB, transforming regulation away from established geopolitical boundaries and providing incentive for a more efficient and effective collaborative approach. As a voluntary program, the proposed bill will encourage participation through funding incentives and will foster participation promoted by primary stakeholders such as MS4 permit holders who may, through watershed stakeholder collaboration, pursue conversion of conventional permits to regional watershed level stormwater based permits.

The proposed bill represents a new paradigm for California regulatory authorities. One of the goals of the bill is to move beyond TMDLs and point source regulation to a system focused on pollution prevention and broader monitoring programs where progress and effectiveness can be tracked and documented throughout a watershed. This shift will require regulating authorities to exercise additional flexibility in the permitting process.

Because the proposed bill allows watershed management authorities to self-define and provides wide flexibility as to how management authorities can achieve stormwater management goals, it provides a framework for creative and regionally focused approaches. As watershed management authorities expand their thinking to find solutions to their stormwater management and funding challenges, those solutions will provide new examples and case studies for other stormwater management authorities. It is our vision that this approach will ultimately lead to an increase in new and innovative examples of stormwater capture and reuse, low impact development (LID), source control, and public education and outreach programs to improve stormwater management. The long term objective of this effort is to develop a comprehensive stormwater management framework that expands California's current water resource governance structure in a manner that fosters interagency collaboration at the watershed scale.

## APPENDIX A: 2013 WATER LEADERS CLASS CONSOLIDATED MENTOR RESPONSES

Question 1: Regulations; How effective are stormwater regulations today and how could we improve their effectiveness?

### Effectiveness of Current Regulations

There was a consistent consensus among the mentors that measuring the effectiveness of stormwater regulations is a difficult task; however, there are many ways they can be improved at various governance levels. At the federal level, the current NPDES program was not developed to address the vast amounts of non-point stormwater runoff pollution. Attempts by the EPA to address this issue by updating the regulations have proven inefficient. It would be much more effective if stormwater regulation would have its own program outside of the point source-based National Pollutant Discharge Elimination System program. The provisions of the NPDES program are sometimes too restrictive and counter-productive to implementing a meaningful and workable solution for what is essentially a diffuse, non-point pollution problem.

At the municipal level, it is difficult to control the nature of stormwater pollution and to control people's actions that contribute to it. The regulations are also implemented at a geo-political level that often renders them much less effective than they would be if implemented at a watershed/regional level. Many municipalities have limited resources to address stormwater pollution which often times receives a lack in prioritization. Stormwater regulations today are primarily about implementing low cost no regret actions. The net result of this type of regulation does not add up to a lot of measurable benefits and these no regret actions are inherently difficult to measure. The requirements in the MS4 permits also require actions that can prove to be unproductive in improving water quality. Prescriptive requirements do not have flexibility and may lack prioritization for municipalities with limited resources.

The current stormwater regulations reflect the fundamental tension in the Clean Water Act: the concept of regulating stormwater at a municipal permit level. It is currently set-up as an iterative process, with the goal being to see an improvement as time goes on to the "maximum extent practical." The regulations have never been updated to require a "fundamental improvement over time" and so we are stuck in repetition that is insufficient for meeting water quality needs. In addition, there have been little consequences for non-compliance so change/improvement has been incredibly slow. The current political climate is supportive of more social solutions (e.g. public outreach to discourage plastic bags) over more technical solutions (e.g. requiring a device to trap and collect plastic bags in stormwater) but many of our current regulations are based on decisions made 20-30 years ago that are based on more technical measures.

From the MS4 perspective, water quality standards represent a much needed area of regulatory reform. Water quality standards were initially developed to protect water bodies from the continuous and relatively homogenous discharges of wastewater (EPA, 1986). The standards do not reflect the dynamic conditions found in stormwater discharges, or the intermittent nature of the discharges. The problem is particularly acute for sanitary quality standards, where body contact recreation is not a practical beneficial use for safety reasons in highly modified creek systems during runoff events in most parts of the Country.

There is a general feeling that we are making compliance more expensive and lengthy, but not more effective in water quality protection. Permit implementation is where you see effectiveness, not permit language. The true test of how effective it is, is from monitoring of the health of the habitats downhill and receiving waters. A biological assessment of how well are the habitats doing is something that should become more of a heavy focus as opposed to benchmarks for numeric effluent limitations.

### **Improvements to Current Regulations**

There were many ideas provided by the mentors in regards to improving the effectiveness of the current stormwater regulations on federal, state, and local levels. On a nationwide level, it was suggested that the EPA should engage in much more vigilant regulatory oversight in the national licensing of products that contribute significantly to stormwater pollution. Also, there is a need to improve the way states and local agencies communicate and work with legislators to develop a more cohesive management approach to address the goals of stormwater regulations. Effectiveness could be improved by performing cost-benefit analyses for new regulations as well as adding numeric limits nationwide to stormwater permits and having regulations apply to existing development. Facility specific numeric effluent limits based on characteristics of site/industry may be a more realistic approach to developing numeric effluent limits on storm sewer systems due to data limitations. There is a need for a global monitoring system and to change the whole way we think about pollution. There is a need for land use based discharge limits. Lastly, the federal government should provide more financial support to state and local efforts to regulate stormwater. EPA is in the process of developing new stormwater regulations for post-construction.

At the state and local levels, it was recommended that new development, public outreach, monitoring, and aspects associated with the State's general permits (construction and commercial/industrial) are best implemented regionally and illicit discharge/connection, municipal operations, and some functions of commercial/industrial are best handled at the local level. In general, flood control, wastewater, solid waste, and drinking water are programs within a MS4 that could affect the storm water program. MS4's should look at these programs even if the MS4 is not responsible for those programs. All these programs tend to work exclusively of each other instead of complimenting each other. There needs to be more certainty and standardization in the permits which outline the mandatory minimum measures and better defines the maximum extent practicable. Future regulations need to emphasize water quality based actions and focus on controlling specific pollutants that strive for water quality endpoints. Improving regulations should be focused more on concrete solutions and less on general programmatic solutions. For instance, identify what priority discharges are and address the most egregious discharges first. In other words, address on a more specific basis, rather than such a high-level general basis. The SWRCB is currently looking at rewriting the Phase 2 general permit and its Receiving Waters policy.

### **Question 2: Regulations; What are some upcoming regulatory trends in stormwater?**

The mentors highlighted a number of regulatory trends in stormwater. These trends included low-impact development (LID) for development/redevelopment projects, moving back towards generalized permits, watershed-based planning, and TMDLs for more pollutants of concern. However, generalized permits don't always lend themselves to innovative reuse projects, but could potentially save more time for implementation.



The previous permits asked for consideration of LID and the next permit drafts are mandating the implementation of LID or requiring the permittee to explain the infeasibility of implementation through quantification; however, the definition of infeasibility may prove to be complicated. The goal is to assign priority to certain LID methods that favor onsite infiltration or using existing landscaping. We should also see more permits that will include quantifiable results and the requirement for green infrastructure to deal with stormwater at the source (source control instead of treatment). Projects will likely be required to provide multiple benefits (water quality, habitat, energy, air quality, etc.) and incorporate hydromodification control provisions which require the rates and volumes of runoff from developing landscapes be controlled in addition to pollutant loadings.

The USEPA initiated a National Stormwater Rulemaking to reduce storm water discharges from, at a minimum, new development and redevelopment projects and strengthen the storm water program. The USEPA is looking at options under consideration for post-construction requirements for new and redevelopment projects. These options are: (1) for new development to manage runoff onsite from a design storm through green infrastructure practices that infiltrate, evapotranspire, or harvest/reuse the excess discharge volume; and (2) a lower standard for redevelopment. For sites where onsite retention is not feasible, alternative compliance options such as off-site mitigation and payment into in-lieu programs may be available.

There also is an upcoming trend for stormwater capture and reuse and increasing inclusion of stormwater as a component in water supply portfolios. : Recent municipal stormwater permits have included provisions for enhanced water planning. For example, Enhanced Watershed Management Plan (Los Angeles municipal stormwater permit) and Water Quality Improvement Plan (San Diego Regional Stormwater Permit). Projects that can simultaneously green cities, improve quality and supply of water on the same dollar and meet regulations will be the trend. It is important to think of stormwater as part of the water supply and retrofit areas in watersheds to capture stormwater on a grander scale. Stormwater could possibly be captured to recharge to groundwater and used for water supply (e.g., irrigation). Spending money on this type of infrastructure in coastal areas may prove more cost-effective than other areas currently being explored. The bottom line is that “we can no longer separate stormwater from water supply.”

Another upcoming trend is to merge Phase 1 and Phase 2 permits so that there is no longer a distinction between the two and to issue one-size-fits-all permits. It used to be that agencies could write their own stormwater management plans but it took 3-4 years to get approval after public review and comment of each plan. Now, Regional Water Boards issue general permits that can receive public review and comment just once, but at the expense of flexibility and tailoring to the individual agencies. In addition, there is more regulation, not less, and expansion to cover more communities under stormwater permits. Trends are finally starting to shift towards a regional approach that specifically targets an area's specific issues and needs while recognizing the systems as a whole, specifically a watershed approach to stormwater management. Recent municipal stormwater permit plans that have provisions for enhanced regional water quality planning are the Los Angeles municipal stormwater permit (Enhanced Watershed Management Plan) and the San Diego Regional Stormwater Permit (Water Quality Improvement Plan).

Lastly, there is a trend of incorporating an increasing number of TMDLs which require specific pollutants to be managed to achieve specific water quality objectives within a prescribed schedule. There will be more water quality based requirements and mandatory minimum requirements. Specifically, relating to

the implementation of TMDL's where they exist and for other pollutants of concern. There will need to be a great emphasis on understanding a regions water quality baseline/starting point for pollutants. Permits will require permittees to take actions to reach certain percentage reductions. For example there will be permits requiring a certain percent reduction of a pollutant in a certain watershed to have net reduction in the receiving water. The focus will likely be on measurable and more identifiable endpoint goals such as the prescription of more numeric end point limitations defined in permits and the use of biological indicators in measuring the biological health of receiving waters and achieving water quality standards.

Question 3: Regulations, New Approaches; What new approaches to stormwater management and regulations are working and what are not working? Are there any models of stormwater management or regulation in another state or country that California can learn from? Can you provide some specific case studies that have been successful?

One of the stormwater regulation approaches that the mentors identified to be working included the incorporation of LID requirements into project design to meet MS4 permit water quality control requirements. During the very earliest stages of implementation based on MS4 permits adopted between 2008 and 2010, incorporation into projects is going relatively smoothly in most southern California jurisdictions.

There also is more of an emphasis on watershed boundaries, drainage area and/or jurisdictions. There is a focus on developing water quality baselines and developing measurable outcomes to regulate pollutants of concern at the sources of production. Regional solutions have to date have proven to be the most effective approach for achieving significant improvements in water quality. Dry weather flow diversion at coastal outfalls has also delivered very significant improvements in coastal water quality during dry weather in Orange County.

Education has also been successful at both the legislative and public levels including drug take-back events and household hazardous waste collection efforts. Prevention is cheaper than treatment.

Some of the approaches that appear to be ineffective include the fact that LID is only imposed on redevelopment land or greenfields and has little to no effect on existing land use practices. The low levels of building activity as a result of depressed economic conditions between 2008 and 2012 have resulted in a reduction of LID related projects. Also, while these somewhat complex requirements mitigate for further losses of stream system function that might have otherwise arisen at the urbanizing fringes of cities, they are not addressing the water quality impacts that are the consequence of historic development. The effectiveness of using LID in improving water quality has not been fully demonstrated because of the relative infancy of the program and the difficulty in separating out the effect of small changes in stormwater management relative to the already built environment. The historical approach of putting in pipes to move stormwater away is not working. Concept of 'safe harbor.' Concept is that as long as we appear to be working towards compliance with regulations, then we are effectively 'in compliance with the regulation' and no penalties shall be placed against us.

In general, the mentors agreed that California was ahead of other states in terms of advanced stormwater regulations. California appears to be on the forefront in terms of LID, green infrastructure, and numeric effluents limits. Regional monitoring is also starting to become more encouraged in California. SWAMP (Surface Water Ambient Monitoring Program), a program that assesses water quality

in California's surface waters, has historically not been aligned with stormwater, but over the past 7-8 years, it is being changed to support local stormwater implementation.

Trash requirements in Phase 1 areas of San Francisco Bay Area are also being implemented. The requirements are trying to eliminate discharges of trash in municipal storm drain networks, address homeless encampments, and reduce littering. Orange County has taken and integrated water resources management approach in its stormwater program, and has some of the cleanest beaches and ocean waters in California. Riverside County was out in front and ahead of most permittees in developing standard LID BMP designs suitable for arid Riverside County, and in developing a testing facility to hopefully continually improve upon design guidance. In addition, the Irvine Ranch Natural Treatment System (NTS), a series of constructed wetlands in the Newport Bay watershed, is the most likely the single most significant initiative contributing to the attainment of the watershed's Nitrogen TMDL.

There are also new models for permits that cover areas along the urban fringe, incorporating them into larger permit activities. At a national level there is currently nothing about retrofitting planning, but some California permits do (SD and LA). This is important because most of our urban area is already built so retrofitting will play a key role.

An example of a proactive stormwater quality management approaches in southern California was Proposition O. In 2004, Los Angeles voters overwhelmingly passed Proposition O, which authorized the City of Los Angeles to issue a series of general obligation bonds for up to \$500 million for projects to protect public health by cleaning up pollutants in LA's regional waterways and ocean to meet federal Clean Water Act regulations. Proposition O's main objective was to fund projects related to rivers, lakes, beaches, bays and ocean water quality protection, water conservation, drinking water and source protection, flood water reduction, river and neighborhood parks that prevent polluted runoff and improve water quality, stormwater capture, and clean-up and re-use. An Administrative Oversight Committee (AOC) and Citizens Oversight Advisory Committee administer the projects funded by Proposition O.

Another example of a successful stormwater quality management approach took place in the Sun Valley Watershed. The underserved Sun Valley community located in L.A.'s San Fernando Valley has long suffered serious flooding problems. This is due, in part, to the hard pavement that covers much of the community. Instead of soaking into the ground or being captured for reuse, rainwater becomes polluted with runoff and has nowhere to go. TreePeople is working in partnership with the Los Angeles County Department of Public Works, the City of Los Angeles, and other local stakeholders to create a large-scale sustainable watershed management demonstration project in the 2,700-acre San Fernando Valley watershed. The group developed a Sun Valley Watershed Management Plan and Program Environmental Impact Report (PEIR). The Los Angeles County Board of Supervisors adopted the plan and certified the report in 2004.

The mentors also mentioned other states and countries that have had successful stormwater quality improvement projects. In Wisconsin, they tied water quality monitoring to evaluating program effectiveness such that the state agency is involved in the monitoring so it is less of a burden on locals to implement while making monitoring more of a partnership. Portland and Seattle also have a lot of LID; however, that is mostly due to the fact that they have combined sewers and most of their work is being funded by wastewater funds. Philadelphia also has a combined sewer overflow system and has plans to

green 10,000 acres. In addition, the European Union's Water Framework Directive is a good example of a well thought out and thorough aquatic resource inventory and condition assessment framework that forms the basis of water quality planning and regulatory approaches.

Some other techniques mentioned included using community based social marketing (CBSM) to stop littering. CBSM applies sociology towards public education. It applies rigorous data (e.g., surveys) towards outreach instead of basing approaches on our own perceived assumptions and has the potential to be a successful case study. One example is Our Water Our World. Our Water Our World is a point of sale outreach campaign in stores that sell pesticides. The program provides info on less toxic alternatives to pesticides. The outreach campaign targets consumers, but partners with and trains the stores on less toxic alternatives to pesticides. Some stores have even stopped selling some pesticides after their staff has received the training. Local organization creating strict regulations (i.e. banning plastic bags) is often more effective than a statewide or nationwide regulation.

There is also promising regulation aiming to improve stormwater quality. SB 346 requires that, in order to improve and protect the state's aquatic environment, the amount of copper in brake pads sold in California needs to be reduced to 0.5% copper by weight by 2025. The bill also creates limits and monitoring requirements for other brake pad materials. Since much of the copper in stormwater runoff is in a dissolved form, the type of treatment technologies that are most commonly retrofitted into storm drain systems—drain inserts that remove trash and other solids—are not effective in removing it.

**Question 4: Challenges; What can be done to promote greater source control? Do you know of case studies in which this has been implemented effectively and efficiently?**

According to the interviews there are several avenues by which to promote greater source control. The ideas depend on the source of pollution as well as the preferred public policy tool.

Taxes: For example a water quality tax on trash, such as taxes on cigarettes and plastic manufacturers that would go towards trash pickup.

More stringent trash policies: Expanding on current policies to reduce the source of trash such as full trash collection at drain inlets, ordinances that encourage people to bring their own containers to stores and restaurants, plastic bag bans, and styrofoam bans. Intercepting the trash before it reaches water ways, which can be accomplished through different methods such as the LID approach and trash TMDLs in Los Angeles.

Increased producer responsibility: There is a need for greater source control of pesticides because those chemicals end up on 303(d) listings and then municipalities have to meet the water quality requirements without any way to stop the chemicals from entering the environment. The next front in source control is producer responsibility and changing product formulas to prevent pollutant generation.

Increased regulation or increased use of regulatory authority (enforcement): This is where the pollutant never gets to the environment through methods such as banning a product or reformulating products. Examples include organic pesticides banned for residential use and copper brake pads. These methods are narrow and targeted at specific problems and generally take a long time to develop (i.e., the copper brake pad ban took around 10 years to transpire). In addition the State and Federal government need to be convinced to use existing regulatory authorities to benefit surface water quality. When toxins are up

for re-registration by the EPA and the data shows a toxic presence, than the EPA can require phasing out the use or not re-register the product. Having the data is key. Currently lots of money is spent on water quality monitoring but not in an effective way, it needs to be re-organized.

While identifying contaminants of concern, and the source thereof, may be best facilitated by local agencies, better broad-based communication and/or coordination facilitated by the state would provide the local agencies with a larger database for more efficient source determination. Once the source has been determined, local agencies lack the political power and/or statutory authority to cause efficient change; however, source control leadership is a hat the state has not wanted to wear. It would be good to regulate products that are manufactured with pollutants of concern and find alternatives (green chemistry movement) to those chemicals to keep them out of the waste stream. The State water board needs to be more invested in source control; for example the board has the NPDES hammer. The state water board needs to buy into that model. Assign high-level management to coordinate effectively with DPR to make changes.

Treatment: Keeping stormwater on site, treating and then reusing it. Everyone in California is in need of another water supply.

Education: Education of the public can promote greater source control as well. One public campaign example is that car wash runoff is really bad for the storm drains.

Technology advances: Street sweepers, vacuum sweepers, centrifuges that spin sediment out, Electric vehicles (using fewer fluids than normal cars)

## **Case Studies**

Pesticide regulation:

- Diazinon and chlorophos have been de-listed for household use. This happened 5-10 years ago and we have seen a decrease in these contaminants in urban stormwater. The diazinon ban in the central valley incorporated a water shed approach that has been effective, link to report: <http://www.epa.gov/region9/water/watershed/measurw/feather-sac/2010SacFeatherRiverSP12final-Rpt.pdf>
- The removal from the marketplace of organo-phosphorus pesticides
- California Department of Pesticide Regulation “Surface Water Protection Regulations” which are expected to significantly reduce pyrethroid pesticide concentrations in runoff from urban areas.

Other sources:

- Phase out lead compounds in gasoline
- California Senate Bill 346 which will phase copper out of brake pads
- The California Redemption or Refund Value (CRVs) for recyclables, recycling or producer take-back of certain items like used paint and carpet, or ordinances that ban plastic bags
- The plastic bag ban has been very effective in keeping bags out of the ocean

## Case Study: Santa Monica, CA

Santa Monica attracts enough tourists and workers each day that it doubles its population. Urban runoff is the largest contributor of pollutants entering the beach and nearby waters, and threatens the economic viability and community amenities of this beach-side community.

Santa Monica adopted a Watershed Management Plan in 2006 to protect and improve the water quality of Santa Monica Bay. The plan lays out the following priorities to balance urban use with ecosystem function: Reduce urban runoff pollution; Reduce urban flooding; Increase water conservation; Increase recreational opportunities and open space; and Increase wildlife and marine habitat.

These watershed management goals are met with a storm water management ordinance, storm water fee, a rebate program and capital improvements projects.

Other Case Studies: The Prado Dam and Sun Valley Park are examples of successful storm water projects.

**Question 5: Challenges; What are some of the top priorities that you think must be addressed the soonest regarding stormwater regulations, monitoring, and program implementation?**

- Funding
  - Revising Proposition 218 to allow stormwater to be included as a utility. The time and expense of a ballot initiative detracts from working the reasonable improvements to stormwater quality.
  - Getting the California legislature to help local government obtain a sustainable funding stream.
  - Stormwater regulations, monitoring and programming implementation needs to be adopted with local agencies in mind because the cost to regulate is not a level playing field across agencies
- Institutional reform
  - Generating more trustful and beneficial partnerships between regulators, local governments, and NGO's.
  - Lack of integration across regulatory agencies leads to overregulation because there are so many different agencies. Lack of integration prevents us from doing big actions like buying habitat near the creek and creating a buffer by restricting development.
  - Need to bring storm water and water supply together.
  - The risk and practice of Third Party lawsuits harms cooperative and creative approaches to stormwater management. Measures to limit litigation, such as limitations on the recuperation of costs, may improve the ability to develop flexible and efficient approaches to stormwater by industry.
  - Allow for direct potable reuse
  - Stormwater may warrant special consideration under the clean water act because of the short temporal nature and potential for larger amounts of dilution.

- Measures to limit litigation, such as limitations on the recuperation of costs, may improve the ability to develop flexible and efficient approaches to stormwater by industry.
- LID improvements
  - Include retrofitting of existing infrastructure in LID requirements
- Priority pollutants
  - Sediment
  - Pathogens and bacteria.
  - Pharmaceuticals
  - Pesticides and fertilizers
  - Trash
  - Restore the contaminated aquifers
  - Generally increase source control
- Monitoring
  - Measures to limit litigation, such as limitations on the recuperation of costs, may improve the ability to develop flexible and efficient approaches to stormwater by industry.
  - Convene expert panels to determine the best places to monitor
  - Move monitoring higher in the watershed so that attribution of pollution is easier
  - Address the built environment and provide sufficient monitoring to demonstrate compliance
  - Ensure funding for beach monitoring continues
  - Monitor directly from drains
  - Improve monitoring of outfalls
  - Couple monitoring with better laboratory measurement because the science has evolved greatly
- The SWRCB needs to address the receiving water language in the phase 2 permit. The community may be out of compliance regardless of the amount of effort it puts in to meet the permit if it has no way to control the pollutant.
- Regulation/permit implementation and enforcement
  - Work out regulation inconsistencies such as treated wastewater standards are in some ways more restrictive than drinking water standards. And in wastewater discharge, secondary Minimum Contaminant Levels are treated equally to primary MCLs.
  - Require meaningful and measurable benefits for actions in permits
  - Broaden the scale of permits to cover more than one city therefore forcing them to work together, and hopefully reducing some of the transactional costs.
  - Cease differentiating between Phase I and Phase II communities. Phase I/II distinctions create an economic incentive for new development and commercial/industrial

relocation into Phase II communities exacerbating the environmental problems the Phase I rules are intended to mitigate.

- Compliance with TMDLs
  - Measure the effectiveness of BMPs
  - A better delineation of maximum extent practical for various pollutants and permits should be written based on what is realistically doable for a community. The fear of enforcement needs to be overcome and municipalities need to begin leading the implementation efforts beyond what is required.
  - Put in place incentive structures
  - Permits should have watershed and site-specific approaches tailored to the specific industry and specific pollutants causing impairment of a water body. (e.g. a watershed with high naturally occurring selenium should not have a selenium standard at levels lower than the source waters). Standards should identify specific levels of harm so that improvements in detection do not necessarily result in a stricter standard.
  - Permits should provide flexibility and allow for alternative approaches to achieve compliance.
- Education
    - Educate fee payers and value water
    - Change water consumption attitudes
  - Be more rigorous about the science behind regulations
  - Resolve hydromodification

**Question 6: Challenges; What are some potential funding mechanisms that have been used (or are being explored now) to pay for stormwater management, infrastructure and operations and maintenance costs?**

### **State and federal grants**

State and federal grants are available, but often fund matching is required. Also, not all costs are eligible for reimbursement. The application process is usually time-consuming with no guarantee of success. Current opportunities are Proposition 84 funds (state) and with CWA Section 319 Nonpoint Source Grants (federal).

### **Bonds**

Bonds can raise funds for infrastructure development.

### **Property Taxes**

Property taxes have been strongly used in the past as so much of the pollution comes from runoff. Some funding could be generated from higher property taxes and efficiencies.

### **General Fund**

Meeting stormwater permit requirements is the law so money from General Funds can be used. Many municipalities use this as their sole funding mechanism for stormwater. However, funding from general



funds can vary from year to year. In a good economy, the general can support stormwater management. In a poor economy, the programs are reduced or downsized. Furthermore, multiple departments within a municipality compete for General Fund funding. As a result, the General Fund does not meet the objective of providing sufficient and stable revenue. A general fund approach is doomed to fail because there is never enough money to do it and it has to compete with public services such as police and fire.

**User fees** can be used for voluntary services. The biggest funding mechanism is ratepayers paying for water. To bring stormwater and water supply management under one roof and open up the funding mechanisms for one water and not separate silos of water. The biggest challenge is to change the mindset of the public and begin thinking outside of the box. For instance, stormwater districts might serve as water suppliers. The Riverside area is showing some signs of this.

### **Sewer and Storm Drainage Fee**

Sewer Connection Fees

### **Stormwater Utility Fee**

One of the most common funding mechanisms presently is a stormwater fee levied onto homeowners from cities. A storm water utility fee is the typical funding mechanism that is being used by municipalities in the Central Valley region to pay for storm water management, infrastructure, and operations and maintenance costs. If structured correctly, utility fees can provide a stable, reliable revenue source that is sufficient to cover costs. However, there are limitations to this also as explained in Question #7. As a public utility that charges the user a monthly cost for usage associated with their parcel, local agencies should secure steady funding. Since the local agencies must provide drainage, we must then be a utility. The most common funding mechanism I know about is a surcharge on utility billing.

### Pre Proposition 218 Stormwater Fees

Some municipalities established stormwater utilities that predated Prop-218, so they can continue to charge fees that will pay for stormwater control.

### Voter approval of Stormwater Fees

Post Prop-218, other municipalities have been successful at getting voter approval of stormwater fees, but only where there are compelling reasons to have the community support the stormwater controls. For example, beach communities have better reasons to promote stormwater regulations and have people support paying for it because they can suffer beach closures from water quality pollution, which in turn affects their tourism-based economy. Proposition 218 makes it very difficult for municipalities to raise the necessary revenue to run an effective stormwater program. Prop 218 requires the explicit approval of voters to implement stormwater charges, so that doesn't often go well.

The other mechanism will take legislative action to amend proposition 218 to allow funding for stormwater projects explicitly, in addition to water, sewer and trash. A legislative adjustment to proposition 218, similar to the water supply approach, would allow stormwater agencies to raise their rates without prior majority approval, but still allow for challenges after the fact. Some communities are beginning to argue that some of the requirements in their permits are unfunded mandates (e.g. placing

trash receptacles at every bus stop in Los Angeles). There is a case in court now. There is talk about giving stormwater some kind of Prop 218 exemption, similar to the way 218 treats water and wastewater.

### **State Revolving Fund**

State revolving funds could be used to fund big projects but not day-to-day management of stormwater. Historically, there have been little State revolving funds for stormwater, but it is a funding mechanism that is being investigated now. Some think State revolving funds might be a good idea because they don't require large annual infusions of money. Funding mechanisms that are being investigated include State Revolving Fund (ARRA) could be used to improve infrastructures.

### **Development Fee**

Municipalities can pay for stormwater controls through the Specific Plan process which allows community facilities districts to be formed and funded for new development; however, this is not enough to cover ongoing management of stormwater programs. There are few stormwater districts; more common are wastewater and flood control districts. A stormwater fee for new development only covers the cost of stormwater management attributed to the new development and typically is about \$18/residential unit. In communities that are no longer growing, there is no way to pay for increased regulations. Developer impact fees are an option, but impact fees can only be used for capacity-related projects and cannot be used for operations and maintenance. However, in-lieu fees for mitigation or offset may be established.

### **Special District Fund**

Funding mechanisms that are being investigated included Special Districts charging permit fees to discharge into the sewer system. Homeowners could be required to get a permit to cover stormwater discharge. An available tool that is not widely used is SB 310 which authorizes a permittee or copermitttee under an NPDES permit for a municipal separate storm sewer system to charge a fee to develop a watershed improvement plan (WIP) to address stormwater issues (218 still applies).

### **Producer Pays**

Other avenues are extended producer responsibility (i.e., making the producers pay for it). These can include gas/pump taxes or used oil recycling grants. Fees are often levied on commercial entities. Business license fees can be charged to businesses that have a high impact on storm water program services such as fast food restaurants that produce litter. Funding for trash should be derived from near-draconian CRV-fees and a reasonable rate-of-return for those willing to pick-up/turn-in trash. Advanced disposal fees for things like oil that are big pollutants are another available mechanism. In my opinion, streets and the vehicles that use them create a significant percentage of the impervious surfaces and wet-weather pollutant load from urbanized areas, poor conservation practices (overspray and/or over-watering of lawns) creates a significant percentage of dry-weather flows and our throw-away society creates a, who-cares-about-trash mentality. Funding for mitigation of the former could be achieved via taxes on fuel – the nexus is obvious and the proportional payment scheme (the more you drive the more you pollute and/or use the roads, the more you pay) is inherently defensible.

Funding for conservation may not be necessary if the fee structure of the water purveyor has been properly established such that water-wasting is too expensive to conceive. Alternatively, the funding could be derived from the purveyor's top rate tier. (i.e., As you use more, you pay disproportionately higher rates per unit used.) However, the absence of drainage from the Prop 218 water/waste water exclusion could make this combined billing concept unachievable/a legal miasma. In my opinion: In the absence of a legislative fix to Prop 218, drainage in general and stormwater specifically are doomed to achieving the least amount possible instead of the maximum extent practicable.

A novel funding mechanism is the Calrecycle Used Oil Recycling program. State provides funding to local agencies for development and maintenance of used oil and oil filter collection and recycling. It effectively distributes costs to consumers and then uses that funding to incentivize good behavior. We should be doing more of this.

### **Enforcement of Fines**

Beef up the enforcement staff at the RWQCB and regularly inspect facilities and set up a mechanism to fine. The goal not being to collect fines but enforcing polluters to "clean-up" their act and pay for those improvements necessary to protect water quality; equivalent to obtaining money for clean-up projects; why should the public subsidize gross polluters profits through the back end of clean up?

### **Other Thoughts:**

- There should be a greater use of public-private partnerships, and when we can rebrand stormwater as an asset this will be easier. Also, there is an employment link here (green jobs) but there is nothing in the permit that incentivizes jobs at this time.
- Allow for private interests to fund individual studies on stormwater and the effects in order to develop the data required for site-specific standards.
- Implement an across the board tax or fees where all people pay.
- The state needs to find a way to pay for it.
- The Legislature should ensure local agencies receive the necessary funding.
- Los Angeles County developed (and passed) a proposal for funding based on parcel size and permeability.

**Case Study:** Los Angeles County Clean Water, Clean Beaches Measure. Some cities like Palo Alto base their stormwater fees on the amount of impervious surface created. Philadelphia is looking at a stormwater fee to finance projects (based on straight fee or amount of impervious cover on property).

**Question 7: Challenges; What are some of the biggest barriers or challenges to funding stormwater management?**

### **Recent Recession.**

The current economy, including slow development (at least for communities still growing) that leads to slow funding sources for stormwater management and also restricted revenue all around, leading to prioritization away from stormwater management to other critical services. The economics of it - cities

and voters are tapped out in the present economy. Plus cities are in financial crisis; it is difficult to explain funding stormwater when laying off teachers and police officers.

### **Smaller government/government distrust**

Growing distrust of government and sentiment that government needs to get smaller. Anti-tax organizations are against funding.

### **Lack of Public Understanding/Awareness and Political Support/Willpower**

Lack of public awareness of the magnitude of water quality issues. Public lack of understanding about who should be paying. There is a public perception that stormwater funding is “paying for the rain” and without a compelling reason to address stormwater controls (like beach closures), it is difficult to obtain public support for stormwater controls. The public doesn’t understand stormwater and how valuable it could be, both for water supply augmentation and to provide an integrating point for making green infrastructure improvements to our public works. The public knows water quality is important when they go to the beach or take a walk in an arroyo, but it’s not on the tip of their conscience or funding priority scale. The vast majority of the people of California/U.S. do not comprehend stormwater and/or urban runoff as a source of environmental degradation. Depending on the economy, public opinion may change quickly. The typical public mindset on stormwater is that it’s “just rain”. The scope and magnitude of the issue is difficult to explain.

Municipalities often lack the support of their leaders and a planning framework to make a coherent argument for funding. Stormwater is often pushed back due to political or other pressures. In general there is often a lack of will and leadership. When there are good leaders at the community level they make things happen through developing good plans and securing grant funds to demonstrate the value of continuing to fund stormwater programs. The issue is typically poorly framed and not explained well. Advocacy will be important because funding will depend on how it’s being sold. The benefit of proper stormwater management is tremendous (water quality, water supply, etc.). The biggest challenge is politics and the lack of willingness at the municipal level to secure new funding for stormwater due competing interests. No rate base: No one is buying the stormwater so it has to come as a service which competes with police, fire, etc. through use of the general fund.

### **Proposition 218, Proposition 13, and Prop 26**

Prop 218, Prop 13, took away the polluters pays- latest proposition. It is harder to establish permits that require polluters to pay. They don’t benefit from the permits. The single biggest challenge to funding stormwater management is Prop-218. Prop-218 imposes procedural and substantive requirements on the adoption of new fees, making it very difficult to pass measures that would increase funding for stormwater management. The only way to change Prop-218 would be to modify or repeal it by an amendment to the California Constitution. Proposition 13 constrains local governments' ability to raise property taxes and specifies that any local tax imposed to pay for specific governmental programs--a "special tax"--must be approved by two-thirds of the voters. Proposition 218: Since the passage of Prop. 13, many local governments have relied increasingly upon other revenue tools to finance local services, most notably: assessments, property-related fees, and a variety of small general purpose taxes (such as hotel, business license, and utility user taxes). It is the use of these local revenue tools that was the focus of Proposition 218 which established requirements for a two-thirds majority approval vote for

their use. Further complicating this is that urban runoff (aka stormwater) is property-related at its foundation; and therefore, a Prop 218 issue. However, the state chooses to use the MS4 NPDES Permit as its catch-all for any pollutant with a nexus to urbanization (e.g. trash, MERP) making property owners less inclined to foot the bill for all of society. FYI: For drainage/stormwater, Prop 218 requires ballots to be mailed to each property owner, a public hearing and votes to be 'weighted' proportional to the relative fee-payment (e.g. if the fee amount is based on the size of the property, then the vote of an owner of a property twice as large gets twice the vote). While the aforementioned alone is expensive, a significant ad campaign is necessary to educate and attempt to persuade >50% to voluntarily increase their taxes – few (if any) Prop 218 votes have passed while the cost to attempt has been huge. Campaigns have little success and high costs (\$200-300k) just to get on the ballot, e.g. Stockton. Obtaining a majority of votes is a challenge due to low voter participation. The fees must be proportionate to the cost of providing service. However, water, sewer, and solid waste fees are exempted from the vote requirement.

### **TMDL Program**

Another barrier is the TMDL program; identify 303d; we have accomplished two things – 25 or 30 years out there and extremely expensive – process is high jacked; huge sums of money to develop and huge sums of money to clean up and least effective. Another potential to increase funding by looking at existing programs that are costly and redirecting funds to more direct impact projects. TMDL is a public announcement that all the stakeholders failed to keep water quality standards.

### **Grant Funding Challenges**

Grants need to be dispersed quickly if not the unspent funds get swept.

### **Regulatory Flexibility**

From the regulators perspective there is a struggle between specific and flexible permits. When permits are specific there are complaints about the lack of funding to implement and when they are flexible there is a lack of implementation because the permit does not clearly specify what is required.

### **Non-Point Source and Lack of Accountability**

It is also challenging because it is multiple point sources - typically the entity causing the problem is responsible for paying for it, but with so many sources it is difficult to pin point responsibility. Well-crafted environmental initiatives can pass, but typically the more local they are and the more tied to specific result projects, the easier they become to pass. Industry resists change, however, like bag manufacturers fighting bag bans and oil companies fighting disposal fees. Biggest barriers are dischargers, who are prone to maximize profits.

Question 8: Challenges; What do you feel are the most challenging overlaps or conflicts in the (institutional) jurisdiction of storm water management in CA and how does this influence accountability for stormwater discharges?

### **Overlaps/conflicts within Municipalities**

Primary responsible entities are municipalities but within municipalities you have industries and highways that also have responsibility. Another good example of overlaps and conflicts is the way waste

load permits are organized; There are two phases: Phase 1 is for large cities while Phase 2 is for state wide smaller cities. There is no integration and planning in both phases which allows for discrepancies and a lack of general and integrated city and regional planning of stormwater management. Low impact development often can conflict with water supply needs when watershed boundaries are crossed. These barriers need to be broken down so that we are managing by watershed rather than by political jurisdiction.

### **High-Level Official Involvement**

Stormwater regulations have not been strict enough for high-level officials to take responsibility for compliance. Without that official, high-level support, local agencies just delegate down to some line staff person who has the weight of stormwater compliance on their shoulders, but little power to achieve compliance. You really need someone of power to speak to the problem. Regulators need to engage and hold accountable higher levels of government.

### **Monitoring and Accountability**

Monitoring isn't setup to allow attribution and fee allocation based on pro rata share of pollution. Hard to make people accountable. More/better monitoring is needed (expensive) that is holistic and designed to monitor for management objective. Person who benefits isn't paying for the monitoring. Constituent monitoring wasn't designed for stormwater. Access issues. At the stormwater level there are instances where multiple jurisdictions have discharges that go to the same watershed, without in-stream monitoring that brackets the jurisdictions and their contributions it's difficult to assign responsibility. NRDC vs. County of Los Angeles is a recent case where NRDC is trying to enforce the permit terms, but those responsible are able to pass the buck.

### **Source Control (e.g. Pesticide and water quality regulation)**

There is disconnect between pesticide regulation and water quality regulation because one approves chemicals for use and the other requires those chemicals to be controlled and monitored. Pesticides get approved without looking at the consequences of cleaning them up or addressing them as a water quality issue. Agencies with overlapping responsibilities for pesticide regulation and water quality regulation should be better coordinating. For example, chemicals from classes of pesticides are later listed on Clean Water Act 303(d) lists and then regulated by total maximum daily loads (TMDLs), with municipalities as the responsible party to meet and/or monitor for the TMDL requirements for those chemicals. But municipalities have no way to regulate the upstream or even within their jurisdiction use of the pesticides.

### **Federal, State, and Local responsibilities**

Overlapping stormwater management responsibilities between the federal, state and local levels. Each agency has limited resources but there is no effort to prioritize, leading to an attempt to do everything not very well rather than a few things well.

### **State Board and Regional Boards**

The abdication by the State Board of its fundamental stormwater policy making responsibilities to the Regional Boards The SWRCB has priorities (e.g. Trash and Hydromod) and groups within the Regional

Board have other/additional priorities (MERP, TMDLs, toxicity studies, pesticide impairment studies, BMP studies, LID studies, RMP, Drinking Water Policy, etc.) and ALL priorities are THE priority. Thus, (as an example) municipalities are required to spend significant assets studying/mitigating mercury even though urban runoff is responsible for <1% of the problem.

### **Flood control and Stormwater management**

Flood control and stormwater management must be handled differently as management actions conflict (move water quickly or let it set?).

Everything is performed in silos (separate departments). Stormwater management requires an integrated approach (Integrated Water Plans). Stormwater can be integrated with flood control. There should be a shared mission or regulatory authority. This will require changes in the law.

### **Flood control agencies and cities/counties**

In Southern CA, Flood Control agencies are the foundation to storm water management. They are overlapped and thus fragmented by other agencies such as City or other agencies. The IRWMP efforts help as do JPAs and other partnerships. However, it is hard to get everyone together.

### **Hierarchy of Water Resources**

Entrenched thinking is one of the biggest challenges in the water resource industry. There is a hierarchy of water resources that values drinking water, waste water, and flood control above stormwater.

### **Land Use and Stormwater**

Municipalities have land use regulations that create issues such as runoff, which other agencies are then required to manage. There is a need for more integrated planning. There should be a focus on reducing peak flows instead of on implementing capital enhancement projects to increase channel capacity. Currently, there are many challenges associated with capture and re-use such as public health concerns, storage and timing. Stormwater pollution and management has a clear nexus to land use. Urban areas are the primary stormwater pollution concern. However, The State and Regional Boards have no land use authority; landuse planning is essentially left to the locals. Given Proposition 13 and other drivers for municipalities to generate revenues, there is no incentive for locals to plan better to minimize stormwater pollution. The state of Maryland has addressed this issue by having the state planning agency (such an agency doesn't exist in California) force local governments to adopt land use and water quality planning elements in their general plans. Failure to do so results in locals losing the ability to zone land use.

### **General Permit Process for Industrial discharges**

A real problem is the general permit process for industrial discharges even though it is a state permit. The state is not real active in enforcing the permit, they don't do the inspections or oversights, and they require the local agencies to implement the state's programs. The state is collecting the fees and then the locals are collecting fees that the dischargers have already paid to the state.

### **Regulatory Challenges**

Regulation amongst myriad agencies. Multi-benefit projects especially suffer here. If it is flood related, water supply, or stormwater pollution related then many agencies would be involved. Furthermore with different regions, water-infrastructure considerations and so on, it becomes very siloed amongst agencies. Without synergy and collaboration it becomes confusing and convoluted. Also, there is no comprehensive ground or surface water regulation in the state which exacerbates the silo effect.

### **Regional, Watershed Planning (SAWPA as model)**

SAWPA is a good model – how to take larger areas with multi jurisdiction and do watershed planning that benefits the watershed and not individual areas. The model shows that instead of having lots of districts and special districts with no one looking at the watershed in general, have a collective agency looking at the whole. Even if it means more money goes to one area over another; the question to ask is how does that compare for the benefit of the watershed? Need to look beyond jurisdictional boundaries and only spending money in that same jurisdiction. SAWPA provides watershed decisions and funds what is best for the watershed based on monies provided. Instead of separate proposals all over and not necessarily implementing what would result in greatest good for the whole watershed. Start looking at water as one water and bring everyone together and do more planning on regional basis with more money and not just decisions in Sacramento that fund projects here and there.

### **No issues**

The boundaries of responsibility are very clear. The LA County Flood Control/Public Works' issues with responsibility for municipal discharges into their system seem to be the most visible manifestation of inter-local conflicts in California. Elsewhere in California, the burden of responsibility for water quality is on the local city-county level and it seems to be working overall. There are actually not that many overlaps so this is not really a big problem. Water supply regulation generally occurs further upstream, while stormwater regulation is generally regulated downstream where it is more of an issue.

Question 9: Recommendations – Management; What can be done to promote a shift in mindset and approach towards integrated water management for stormwater? (By IWM, we mean using stormwater as a resource for water supply and environmental stewardship, tighter integration with land use, watershed scale approaches, low impact development and green infrastructure, and greater sensitivity to natural hydrologic and geomorphic processes)?

1. Work with a Watershed mindset not a local “permit compliance” mindset, decisions need to be made using a holistic water management approach and this should be done at the State level not the individual local level. All water within the watershed should be managed comprehensively rather than compartmentally.
2. Education, educating the public to be environmental stewards, as well as educating the agency decision makers and leaders about the challenges and importance of stormwater management. Proper stormwater management has economic and ecosystem benefits. Sufficient data also needs to be collected to improve stormwater management.
3. Incentives, there needs to be incentives for communities to take storm water issues seriously and into consideration, encourage an integrated water management approach and out of the box thinking. Funds are limited so this is difficult to do but you will have greater support in accomplishing this if communities realize there are multiple benefits.



**Question 10: Recommendations – Communication; How can we better communicate with the public that investment in stormwater (and green infrastructure and LID in particular) is worth their money?**

1. Increase **Public Awareness/Outreach**, currently we are doing a poor job of this; make it a Statewide campaign as well as local. Every Agency needs to send the same message of how important our water quality is. Clean water is important to everyone not only for drinking but for recreation and the environment too. But the public does not see the connection between urban runoff, and how that impacts everything else down the line. Common messages need to be sent from stormwater, drinking water, and wastewater agencies. Let people know what small changes they can make and how they can help as well as what will happen if they do nothing. Different media should be used to attract all audiences and local focus groups should be considered.
2. Prove the benefits; show case the areas and communities that have benefitted from this investment (i.e. Cleaner beaches, increased property value, reduced carbon footprint). More cities need to embrace this, and lead by example. Each new development is an opportunity to show they are doing their part in providing LID infrastructure and then showcase the benefits to the community. City officials, engineers and developers need to work together.

**Question 11: Recommendations – General; What recommendations or advice do you have for other stormwater program managers or state and federal regulators?**

Communication and collaboration is key between stakeholders, regulators, and storm water managers and needs to improve to help prioritize stormwater management/projects. Reach out to one another and get involved, be a part of the change. There needs to be an increased understanding of the challenges that each face in order to develop solutions as stormwater should be looked at from the upstream and downstream. Don't be stuck in your silos, trying to bring back the receiving waters to pre-gold rush days is not a reality. We cannot change the past we can only learn and move forward. Treat storm water as a resource and recognize the physical limitations of urban development. Stormwater management should be a priority. Strong leadership is needed to get anything done. The current permitting process is stuck in an ineffective loop of compromise and inaction. Look for opportunity to break through the stale mate. Each local urban runoff/stormwater manager needs to fight the institutional ignorance that hampers creative environmentally friendly thinking, audit the compliance of their sister departments and enforce when necessary to obtain compliance. Stop looking at the quick and easy fix and start looking at what will be most efficient and effective.

We need to find better ways to relate to the public. We need to tell stories about the problems and the success of the solutions and create a narrative that can appeal to public and make them willing to invest in stormwater infrastructure and buy into regulation. Talk to one another and look to other countries for good examples and models. We are at the point in history where more than 50% of the world's population lives in cities. California is not the only place dealing with stormwater issues.

**Stormwater Watershed Management Authority Act**

**Introduced by 2013 Water Leaders Class**

**October 7, 2013**

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**An act to amend Section 10560 of the Water Code, relating to stormwater.**

LEGISLATIVE COUNCEL'S DIGEST

Proposed Assembly Bill, as introduced, 2013 Water Leaders Class.  
Stormwater Watershed Management Authority Act

Under existing law, the State Water Resources Control Board and the California Regional Water Quality Control Boards prescribe waste discharge requirements for the discharge of stormwater in accordance with the National Pollutant Discharge Elimination System (NPDES) permit program and the Porter-Cologne Water Quality Control Act. Existing law, the Stormwater Resource Planning Act, authorizes a city, county, or special district to develop, jointly or individually, a stormwater resource plan that meets certain standards. Existing law also authorizes a regional water management group, as defined, to adopt an integrated regional water management plan that addresses specified matters. Existing law lacks funding mechanisms and incentives to integrate stormwater management at the most effective scale, the watershed scale.

This bill would create a voluntary program, administered by the State Water Resources Control Board (SWRCB), to make funding available for cities, counties, special districts, or others to form Watershed Management Authorities (Authorities) for the purpose of developing and implementing integrated watershed based stormwater management plans (Plans). This bill first provides grant funding to Authorities to develop Plans according to guidelines developed by the SWRCB. For plans that meet the criteria developed by the SWRCB, this bill also provides grant funding for the Authority to develop a local funding source to support stormwater programs and the implementation of projects consistent with the Plans. Finally, this bill encourages communities to apply for regional water quality permits and directs the SWRCB to support regional permits.

Vote: MAJORITY Appropriation: NO Fiscal Committee: YES Local Program: NO Urgency: NO Tax Levy: NO

**THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:**

**SEC 1. The Legislature finds and declares all of the following:**

- (a) The management of stormwater presents challenges in reducing the pollutants contributing to the impairment of water bodies and complying with the permit terms imposed by regulations.
- (b) The management of stormwater also presents multi-purpose opportunities for flood, control, water supply, recreation, and the protection, restoration, and improvement of stewardship of aquatic, riparian, and watershed resources within the region.
- (c) Existing state and federal laws and regulations, including the Clean Water Act, Porter Cologne Water Quality Control Act, and Stormwater Resource Planning Act provide regulatory tools and mechanisms to improve stormwater management, but rely on individual permit holders acting on individual based requirements and lacks sufficient funding for capital improvements and long-term sustainable funding sources for stormwater programs and infrastructure maintenance.
- (d) Constraints on the establishment of dedicated and sustainable funding sources outside a general fund, including Proposition 218 requirements and lack of consistent community support, impedes the successful implementation of projects for the long-term management of stormwater.
- (e) A watershed-based approach addresses some of the inefficiencies in stormwater management by pooling resources and provides for regional integration and prioritization of stormwater initiatives to take advantage of collaborative stormwater management opportunities. Collaboration at the watershed level allows for coordinated planning, implementation, and monitoring aimed at meeting water quality objectives as defined in regional permits and Plans.
- (f) Although allowed by existing law, watershed-based planning, implementation, and regional permitting can be costly and expensive to undertake with unclear prospects for successful and complete implementation without funding and incentives. Funding for planning allows for Authorities to develop sustainable long-term funding sources to support the implementation of projects designed to meet strategic watershed objectives as outlined in Plans.

**SEC. 2. Watershed-Based Planning Guidelines**

Section 10570 of the Water Code is amended to read:

**10570.**

- (a) Cities, counties, special districts, and/or other municipal separate storm sewer system (MS4) and/or National Pollutant Discharge Elimination System (NPDES) permit holders sharing common drainage areas may voluntarily form Water Management Authorities (Authorities) for the development of watershed based stormwater management plans (Plans). The SWRCB will establish guidelines for the Plans. Such Plans should include, but are not limited to:
  - a. Description of the area covered by the Authority including:
    - i. Geographic scope of the Authority
    - ii. Total drainage area including and upstream of the Authority

- iii. Historical and current conditions within the drainage area
  - iv. Identification of any significant threats to water quality from stormwater runoff.
  - v. Applicable Total Maximum Daily Loads (TMDLs) and constituents of concern
  - vi. Existing permit requirements
- b. Governance structure for the Authority including:
- i. Decision making processes; and
  - ii. Responsibilities for permits.
- c. Measures to identify, prioritize, and address watershed based needs for meeting permit requirements. Such measures should describe the:
- i. Integration of individual plans under the Stormwater Resource Planning Act.
  - ii. Prioritization across different permit requirements.
  - iii. Multi-project benefits from watershed based planning.
- d. Measures to identify, track and report on progress including:
- i. Multi-parameter reporting that includes overall ecosystem health as well as individual constituents.
  - ii. Public outreach such as a watershed report card.
- e. Measures for funding implementation of the plan that may include, but are not limited to:
- i. Grants
  - ii. Bonds
  - iii. Regulatory fees
  - iv. Development fees
  - v. Assessments
  - vi. Property-related fees
  - vii. Establishment of a stormwater utility or integration of stormwater functions into an existing utility, at the local or regional scale to establish, maintain, and manage the identified funding sources.
  - viii. Tiered rate structures that encourage reductions of contaminant loading, source control, low impact development (LID), and advanced treatment.
- (b) Existing planning documents may be utilized as a functionally equivalent plan, including, but not limited to, watershed management plans, integrated resource plans, urban water management plans, stormwater resource plan or similar plans. If a planning document does not meet the standards of this section, a collection of local and regional plans may constitute a functional equivalent.

- (c) A \$250 million grant program, to be administered by the Board, shall be made available to provide financial assistance state-wide for development of Plans. In the awarding of grants, the Board shall consider the potential effectiveness of the Authority, including but not limited to:
  - a. Extent of jurisdiction over key contaminants at the watershed-level
  - b. Extent of jurisdiction over the quantity of runoff
- (d) Planning shall require a 25% cost-share by the Authority.
- (e) The Board shall evaluate Plans for consistency with the guidelines and make recommendations on the measures to be undertaken by the Authorities to make their plans consistent with the guidelines.
- (f) Nothing in this part interferes with or prevents the exercise of authority by a public agency to carry out its programs, projects, or responsibilities.
- (g) Nothing in this part affects requirements imposed under any other provision of law.

### **SEC. 3. Project Funding**

Section 10560 of the Water Code is amended to read:

- (a) Upon meeting the requirements established by the Board in Section 2 of this title, the Authority shall be eligible for implementation funding. Up to \$250 million shall be available in a grant program administered by the SWRCB to implement in the Plans described in Section 2 of this Bill.
- (b) The projects funded pursuant to this chapter shall:
  - a. Be consistent with the Plans developed under Section 2 of this title.
  - b. Include monitoring and metrics for measuring and reporting on the manner in which the project will be effective in preventing and reducing pollution and in demonstrating the desired environmental results.
  - c. Contribute to meeting the requirements of MS4 or other waste discharge permits.
- (c) In awarding grants, the SWRCB shall consider:
  - a. Baseline water quality or environmental quality to be addressed and the nonpoint source or sources of pollution to be prevented or reduced by the project.
  - b. The intended outcomes of the project. This bill intends to provide flexibility for Authorities to meet permit requirements in the manner most effective for local conditions and is not intended to prescribe specific actions.
  - c. The sustainability of the project in terms of long-term operations and maintenance and the source of funding for such activities.
  - d. Multi-program benefits such as, but not limited to:
    - i. Water supply
    - ii. Recreation

- iii. Recovery plans for coho salmon, steelhead trout, or other threatened or endangered aquatic species.
    - iv. Wetlands or other environmental benefits.
  - e. Necessary public agency approvals, entitlements, and permits that may be required to implement the project.
  - f. Other criteria as determined by the SWRCB.
- (d) Upon completion of the project, a recipient of funds under this chapter shall submit a report to the SWRCB that summarizes the completed activities and indicates whether the purposes of the project have been met. The report shall include information collected by the recipient in accordance with the project monitoring and reporting plan, including a determination of the effectiveness of the project in preventing or reducing pollution, and the results of the monitoring program. The SWRCB shall make the report available to the public, watershed groups, and federal, state, and local agencies.
- (e) Implementation shall require a 50% cost share by the Authority.

#### **SEC. 4. Permitting**

Part 2.3 (commencing with Section 10580) is added to Division 6 of the Water Code, to read:

- (a) Upon approval of the Plan, the Authority may voluntarily pursue a conversion of individual MS4 permits to a regional or watershed level stormwater permit consistent with the Clean Water Act and federal regulations contained in Title 40 of the Code of Federal Regulations, part 122, section (40 CFR § 122.26).
- (b) The Board shall recognize and support the benefits of regional permitting. Recognition and support may consist of:
  - a. Waiver of fees
  - b. Technical assistance
  - c. Streamlined permitting processes
- (c) Creation of Plans shall not obligate an Authority to apply for a regional permit, but a regional permit is anticipated to provide substantial benefits to the individual entities in the Authority and should be recognized as a goal of this bill.

#### **SEC. 5. Reporting**

The SWRCB shall prepare and submit annual reports to this committee on the progress of this legislation including the number of Authorities formed, plans completed, projects funded, and improvements in stormwater management. Such reports shall begin one year after passage of this bill and continue until 5 years after the conclusion of the implementation grant program.



## 2013 Water Leaders Class

**2013 Water Leaders: *First row, from left to right*** (Audrey Patterson, Amy Kwong, Caitrin Chappelle, Laura Rocha, Derek Nguyen, Jessi Snyder, Eric Tsai, Brinda Sarathy, Andrew Schwarz, Linda Esteli-Mendez, Ashley Orsaba-Finders). ***Second row, from left to right*** (Brandon Minto, Sandra Lynch, Howard Quan, David Mooney, Kristin White, Jarvis Caldwell, Dustin La Vallee, Shane McCain, Shaun Horne, Holly Jorgensen)



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